Super Natural

Tutorial

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ADABAS & NATURAL

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Specifications contained herein are subject to change and these changes will be reported in subsequent release notes or new editions.

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Preface

This tutorial introduces you to using the most important functions in Super Natural and guides you through adding 11 sample transactions.

About this Tutorial
Sample 1: Basic Transaction
Sample 2: Worksheet
Sample 3: User Fields, Calculation and Logical Conditions Editors
Sample 4: Modes and User File
Sample 5: Layout Editor
Sample 6: File Link
Sample 7: File Lookup
Sample 8: Dynamic Input Fields
Sample 9: RPC Service in Context Mode with Primary, Secondary and Lookup files
Sample 10: RPC Service in Context Mode with Dynamic Input
Sample 11: RPC Service in Direct Mode with Summary Functionality

1 About this Documentation

- Document Conventions 2
- Online Information and Support 2
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Document Conventions

Convention	Description
Bold	Identifies elements on a screen.
`Monospace font`	Identifies service names and locations in the format *`folder.subfolder.service`*, APIs, Java classes, methods, properties.
`Italic`	Identifies: Variables for which you must supply values specific to your own situation or environment. New terms the first time they occur in the text. References to other documentation sources.
`Monospace font`	Identifies: Text you must type in. Messages displayed by the system. Program code.
{ }	Indicates a set of choices from which you must choose one. Type only the information inside the curly braces. Do not type the { } symbols.
|	Separates two mutually exclusive choices in a syntax line. Type one of these choices. Do not type the | symbol.
[ ]	Indicates one or more options. Type only the information inside the square brackets. Do not type the [ ] symbols.
...	Indicates that you can type multiple options of the same type. Type only the information. Do not type the ellipsis (...).

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- Add product feature requests.

Data Protection

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2 About this Tutorial

Using this tutorial, you can gain hands-on experience of the product by creating practical examples.

The sample transactions provide an introduction to the major features of Super Natural.

The description of how to create the first transaction Sample1 is very detailed. The other transaction descriptions refer to parts of the first description when procedures are identical.

The descriptions of the first two transactions guide you through adding transactions using the Help, Asterisk List and Continue functions. The other descriptions tell you how to create the transactions as quickly as possible.

The transaction descriptions tell you where you can obtain further information on certain subjects.

The sample transactions use the demonstration files supplied with Super Natural.

The transaction descriptions assume that you have the following default transaction modes:

```
      Help        Exit              Flip                                Canc

09:22                       ***** Super Natural *****                06.Jan.1998
SNPROF                         - Modify Profile -                      Wednesday

                                          +---Transaction Modes Reporting----+
             _  Screen Colors             !                                  !
                                          ! Data Selection .. F  Full-screen !
             _  Screen Defaults           !                                  !
                                          ! Data Change ..... N  None        !
             _  Date/Time Formats         !                                  !
                                          ! Report Type ..... L  List        !
             _  PF Key Settings           ! Report Level .... D  Detailed    !
                                          !                                  !
             _  Language Code and Checklis ! Destination ..... S  Screen      !
                                          !                                  !
             _  Transaction Options       ! Run Mode ........ O  Online      !
                                          !                                  !
             X  Transaction Modes         ! Batch printer ...    (0 - 31)    !
                                          ! RJE available ... N  (Y/N)       !
                                          !                                  !
                                          +----------------------------------+
```

3 Sample 1: Basic Transaction

- Create the Transaction SAMPLE1 8

Task: Find the start and destination harbors of cruises with yachts of type ATLANTIC 29.

For this transaction, all you need to define are a primary file, display fields and selection criteria. These are the minimum requirements for a transaction.

Transaction Specification

Primary File	*SAG-TOURS-E-CRUISE*
Display Fields	1: `CRUISE-ID` 2: `START-HARBOR` 3: `DESTINATION-HARBOR`
Selection Criteria	CHARTER-YACHT-TYPE = 'ATLANTIC 29'

This section covers the following topics:

- **Create the Transaction SAMPLE1**

Create the Transaction SAMPLE1

To add a transaction

1 Select Transaction from the Main Menu.

Or:

Issue the `TRANSACTION` command.

The Transaction List screen appears. The Transaction List screen is an object list screen. For further information on object list screens, see Choosing an Object in *Starting Up* in the *User's Guide*.

2 Type SAMPLE1 in the `Add` field.

Or:

Issue the `ADD TRANSACTION SAMPLE1` command.

You can abbreviate this command to `AD TR SAMPLE1`.

The Add Transaction window appears with the transaction name already entered in the `Transaction ID` field.

3 Type the description Basic Transaction in the Description field (optional).

To Choose File

The report requires data from the file *SAG-TOURS-E-CRUISE*.

1 Type an asterisk (*) in the `File Name` field.

2 Press Enter.

The File Selection List appears as in the following example:

```
14:12                      ***** Super Natural *****                1993-02-10
                             - Transaction List -                       SN1110
                                                                             ↩

Cmd  Name     Descript + +----------------File Selection List-----------------+
     *______            ! !     File Name                        Access  Info !
 __  CRUI     (93-02-0 ! !  _  SAG-TOURS-E-CH-PRICES               R      _  ↩
!
 __  CRUISE   (93-02-0 ! !  _  SAG-TOURS-E-COMPANY                 R      _  ↩
!
 __  CRUI2    (93-02-0 ! !  _  SAG-TOURS-E-CONTRACT                R      _  ↩
!
 __  DATE     (93-02-0 ! !  _  SAG-TOURS-E-CRUISE                  R      _  ↩
!
 __  PRICE    cruise p ! !  _  SAG-TOURS-E-PERSON                  R      _  ↩
!
 __  SAG-PER  93-01-27 ! !  _  SAG-TOURS-E-YACHT                   R      _  ↩
!
 __  SAMPLEX  simple t ! !  _                                            _  ↩
!
 __  SAMPLE2  ex3-02-0 ! !  _                                            _  ↩
!
 __  SAMPLE3  (92-12-1 ! !  _                                            _  ↩
!
 __  TRAN3    (93-02-0 + !  _                                            _  ↩
!
 __           __________ !  _                                            _  ↩
!
 __           __________ !  _                                            _  ↩
!
Add  sample1             !  _                                            _  ↩
!
                         !                                                  ↩
!
Cmd(s): Modify, Execute, +-------------------------------------------------+
```

3 Mark *SAG-TOURS-E-CRUISE* either with any non-blank character or with the cursor position.

4 Press Enter.

The file name appears in the Add Transaction window as follows:

```
14:12                      ***** Super Natural *****                1993-02-10
                             - Transaction List -                       SN1110
                                                                             ↩

Cmd  Name     Descript +-------------------Add Transaction--------------------+
     *______            !                                                      ↩
!
 __  CRUI     (93-02-0 ! Transaction ID .... SAMPLE1                          ↩
!
 __  CRUISE   (93-02-0 ! Description ....... basic transaction_____________   ↩
!
 __  CRUI2    (93-02-0 !                     ______________________________   ↩
!
 __  DATE     (93-02-0 !                                                      ↩
!
 __  PRICE    cruise p ! File name ......... SAG-TOURS-E-CRUISE_______________ !
 __  SAG-PER  93-01-27 !                                                      ↩
!
 __  SAMPLEX  simple t ! Modify modes ...... _                                ↩
!
 __  SAMPLE2  ex3-02-0 ! Data maintenance .. N (Y/N)                          ↩
!
 __  SAMPLE3  (92-12-1 !                                                      ↩
!
 __  TRAN3    (93-02-0 +-------------------------------------------------------+
```

You can also type the file name *SAG-TOURS-E-CRUISE* directly in the `File Name` field.

5 Press Enter.

The Worksheet appears.

To Choose Fields

The report requires data stored in the fields `CRUISE-ID`, `START-HARBOR` and `DESTINATION-HARBOR`.

1 Enter an asterisk (*) in the first position of the Field Name column.

The Field Selection List window appears:

```
14:11                      ***** Super Natural *****                1993-02-01
SAMPLE1                          - Worksheet -                          SN3011
                                                                            ↩

Ref DB    Field Name    +----------------Field Selection List----------------+
BE        _______________ !     Field Name                        Format  Info !
BF        _______________ !  _  CRUISE-ID                         N8      __  ↩
!
BG        _______________ !  _  CRUISE-TYPE                       A1      __  ↩
!
BH        _______________ !  _  CRUISE-STATUS                     A1      __  ↩
!
BI        _______________ !  _  START                             *G1     __  ↩
!
BJ        _______________ !  _  START-DATE                        N8      __  ↩
!
BK        _______________ !  _  START-TIME                        N6      __  ↩
!
BL        _______________ !  _  END                               *G1     __  ↩
!
BM        _______________ !  _  END-DATE                          N8      __  ↩
!
BN        _______________ !  _  END-TIME                          N6      __  ↩
!
BO        _______________ !  _  START-HARBOR                      A20     __  ↩
!
BP        _______________ !  _  DESTINATION-HARBOR                A20     __  ↩
!
BQ        *______________ !  _  ID-YACHT                          N8      __  ↩
!
BR        _______________ !  _  ID-PREDECESSOR                    N8      __  ↩
!
                          !                                                   ↩
!
                        +More:   +-----------------------------------------+
```

2 Mark the fields `CRUISE-ID`, `START-HARBOR` and `DESTINATION-HARBOR`.

3 Press Enter.

The fields appear in the `Field Name` column and the Worksheet columns next to them are open. The fields are displayed in order of field reference. For further information on field references, see Field Reference (Ref) Column in *Working with the Worksheet* in the *User's Guide*.

You can also enter the names directly into the `Field Name` column.

Determine Display Sequence

`CRUISE-ID` is to be displayed first, `START-HARBOR` second and `DESTINATION-HARBOR` third in the report.

1. Type 1 in the `Sequence` column next to the field `CRUISE-ID`.
2. Type 2 in the `Sequence` column next to the field `START-HARBOR`.
3. Type 3 in the `Sequence` column next to the field `DESTINATION-HARBOR`.

   The Worksheet now has the following entries:

```
11:32                      ***** Super Natural *****                1993-02-01
SAMPLE1                          - Worksheet -                          SN3011
                                                                            ↩

Ref DB    Field Name                        Seq   S/C  Func Def  Info Del   ↩

AA  1K    CRUISE-ID ......................   1__   ___   __   __   __
AJ  1K    START-HARBOR ...................   2__   ___   __   __   __
AK  1K    DESTINATION-HARBOR .............   3__   ___   __   __   __
BE        ________________________________   ___   ___   __   __   __   __   ↩

BF        ________________________________   ___   ___   __   __   __   __   ↩

BG        ________________________________   ___   ___   __   __   __   __   ↩

BH        ________________________________   ___   ___   __   __   __   __   ↩

BI        ________________________________   ___   ___   __   __   __   __   ↩

BJ        ________________________________   ___   ___   __   __   __   __   ↩

BK        ________________________________   ___   ___   __   __   __   __   ↩

BL        ________________________________   ___   ___   __   __   __   __   ↩

BM        ________________________________   ___   ___   __   __   __   __   ↩

BN        ________________________________   ___   ___   __   __   __   __   ↩

BO        ________________________________   ___   ___   __   __   __   __   ↩
                                                                            ↩
                                                                            ↩
Fill in required definitions                                                ↩

Command ===>                                                                ↩

Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help  Next  Exit  Field Incl  Flip  -     +           Sel   Run   Canc ↩
```

Notice that the `Delete` column is now protected for the fields selected for display. For further information on protected columns, see *Sample 2: Worksheet*.

Create Selection Criteria using the `Continue` Function

The report requires information for cruises which have yachts with charter yacht type ATLANTIC 29.

1 Issue the `SELECTION` command.

You can abbreviate this command to `SEL`.

The Selection Editor appears.

2 Issue the `CONTINUE` command.

This command is allocated to PF10.

The Fields window appears:

```
13:21                    ***** Super Natural *****                1993-02-01
SAMPLE1                     - Selection Editor -                     SNZUL-S
                                                                          ↩

                                     +---------------Fields----------------+
      1  <                            !                                    ↩
!
      2  <                            !   _  Field List  Invoke Field List ↩
!
      3  <                            !   _  ALL        Select All Records !
      4  <                            !                                    ↩
!
      5  <                            ! Mark to replace:                   ↩
!
      6  <                            !                                    ↩
!
      7  <                           +-----------------------------------+
```

3 Mark the `Field List` field.

4 Press Enter.

The Field Selection List appears showing the fields already in the `Field Name` column of the Worksheet marked with a chevron (>).

```
13:21                      ***** Super Natural *****                1993-02-01
SAMPLE1                       - Selection Editor -                     SNZUL-S
                                                                            ↩

                        +----------------Field Selection List----------------+
      1  <              !     Field Name                        Format  Info !
      2  <              !  >  CRUISE-ID                         N8      __  ↩
!
      3  <              !  >  START-HARBOR                      A20     __  ↩
!
      4  <              !  >  DESTINATION-HARBOR                A20     __  ↩
!
      5  <              !  _                                            __  ↩
!
      6  <              !  _                                            __  ↩
!
      7  <              !  _                                            __  ↩
!
      8  <              !  _                                            __  ↩
!
      9  <              !  _                                            __  ↩
!
     10  <              !  _                                            __  ↩
!
     11  <              !  _                                            __  ↩
!
     12  <              !  _                                            __  ↩
!
     13  <              ! The selected field will be included.            ↩
!
     14  <              ! Mark to replace: _                              ↩
!
     15  <              !                                                 ↩
!
                        +More:   +-----------------------------------------+
```

5 Issue the `FORWARD` command to see the next page of the Field List.

6 Mark the field `CHARTER-YACHT-TYPE`.

7 Press Enter.

The field name `CHARTER-YACHT-TYPE` appears in the first editor line.

8 Press Enter.

The Operator window appears:

```
13:23                      ***** Super Natural *****                1993-02-01
SAMPLE1                       - Selection Editor -                     SNZUL-S
                                                                             ↩

                                                +----------Operator-----------+
      1  < CHARTER-YACHT-TYPE                    !                             ↩
!
      2  <                                       !   _  EQ (=)   Equal to     ↩
!
      3  <                                       !   _  NE (ª=)  Not Equal    ↩
!
      4  <                                       !   _  LT (<)   Less than    ↩
!
      5  <                                       !   _  LE (<=)  Less Equal   ↩
!
      6  <                                       !   _  GT (>)   Greater than ↩
!
      7  <                                      !   _  GE (>=)  Greater Equal !
      8  <                                      !   _  ST       Starting with !
      9  <                                       !                            ↩
!
     10  <                                       ! Mark to replace: _         ↩
!
     11  <                                       !                            ↩
!
     12  <                                      +-----------------------------+
```

```
 12:01                     ***** Super Natural *****                1995-05-12
NSN1                          - Selection Editor -                     SNZUL-S

                                                 +----------Operator-----------+
      1  < CHARTER-YACHT-TYPE                     !                             ↩
!
      2  <                                        !   _  EQ (=)   Equal to      ↩
!
      3  <                                        !   _  NE (^=)  Not Equal     ↩
!
      4  <                                        !   _  LT (<)   Less than     ↩
!
      5  <                                        !   _  LE (<=)  Less Equal    ↩
!
      6  <                                        !   _  GT (>)   Greater than ↩
!
      7  <                                       !   _  GE (>=)  Greater Equal !
      8  <                                       !   _  ST       Starting with !
      9  <                                        !                             ↩
!
     10  <                                        ! Mark to replace: _          ↩
!
     11  <                                        !                             ↩
!
     12  <                                       +-----------------------------+
     13  <                                                                    >   13
     14  <                                                                    >   14
     15  <                                                                    >   15


Command ===>
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
                                     Flip                                 Canc
```

9 Mark the `EQ (=) Equal To` field.

10 Press Enter.

The operator = appears in the first editor line.

11 Press PF10.

The Value window appears:

```
13:23                      ***** Super Natural *****                1993-02-01
SAMPLE1                       - Selection Editor -                     SNZUL-S
                                                                             ↩

                                          +--------------Value--------------+
      1  < CHARTER-YACHT-TYPE =            !                                ↩
!
      2  <                                 !   _  Alphanumeric Constant     ↩
!
      3  <                                 !   _  Hex Constant              ↩
!
      4  <                                !   _  Define Dynamic Input Field !
      5  <                                 !   _  Invoke Field List         ↩
!
      6  <                                 !                                ↩
!
      7  <                                 !   _  SCAN                      ↩
!
      8  <                                 !   _  MASK                      ↩
!
      9  <                                 !                                ↩
!
     10  <                                 ! Mark to replace: _             ↩
!
     11  <                                 !                                ↩
!
     12  <                                +---------------------------------+
```

12 Mark the `Alphanumeric Constant` field.

For further information on alphanumeric constants, see Constants in *Fields* in the *User's Guide*.

13 Press Enter.

The Alphanumeric Constant window appears:

```
13:23                      ***** Super Natural *****                1993-02-01
SAMPLE1                       - Selection Editor -                     SNZUL-S
                                                                            ↩

                                      +-------Alphanumeric Constant--------+
      1  < CHARTER-YACHT-TYPE =          !                                 ↩
!
      2  <                               !  ' ____________________________  ↩
!
      3  <                              !    ____________________________ ' !
      4  <                               !                                 ↩
!
      5  <                               ! Mark to replace: _              ↩
!
      6  <                               !                                 ↩
!
      7  <                              +-----------------------------------+
      8  <                                  !   _  MASK                    ↩
!
      9  <                                  !                               ↩
!
     10  <                                  ! Mark to replace: _            ↩
!
     11  <                                  !                               ↩
!
     12  <                                 +--------------------------------+
```

14 Type ATLANTIC 29 in the unnamed input field.

15 Press Enter.

The value ATLANTIC 29 appears in inverted commas (' ') in the first editor line.

You can also enter CHARTER-YACHT-TYPE = 'ATLANTIC 29' directly in the editor lines.

```
13:25                      ***** Super Natural *****                1993-02-01
SAMPLE1                       - Selection Editor -                     SNZUL-S
                                                                            ↩

                                                                            ↩

      1  < CHARTER-YACHT-TYPE = 'ATLANTIC 29'                          >    1
      2  <                                                             >    2
      3  <                                                             >    3
      4  <                                                             >    4
      5  <                                                             >    5
```

16 Issue the `CHECK` command. This command is allocated to PF5.

If the selection lines are correct, the transaction specification is complete. You have specified fields to use, display sequence and selection criteria.

To Run the Transaction

You can now either save the transaction and execute it later or you can run it to see the report immediately. If the selection lines are incorrect, you can either correct them or keep the transaction and finish it later.

1 Issue the `RUN` command. This command is allocated to PF11.

The report is generated:

```
13:28:32  CHARTER-YACHT-TYPE = 'ATLANTIC 29'                        1993-02-01
ISAMPLE1                                                               1     ↩

                                                                             ↩

CRUISE-ID     START-HARBOR      DESTINATION-HARBOR                           ↩

--------- -------------------- --------------------                          ↩

                                                                             ↩

       79 KIEL                 KIEL                                          ↩

       80 KIEL                 KIEL                                          ↩

       81 KIEL                 KIEL                                          ↩

       82 KIEL                 KIEL                                          ↩

       83 KIEL                 KIEL                                          ↩

       84 KIEL                 KIEL                                          ↩

       85 KIEL                 KIEL                                          ↩

       86 KIEL                 KIEL                                          ↩

       87 KIEL                 KIEL                                          ↩

       88 KIEL                 KIEL                                          ↩

       89 KIEL                 KIEL                                          ↩

       90 KIEL                 KIEL                                          ↩

       91 KIEL                 KIEL                                          ↩

       92 KIEL                 KIEL                                          ↩

       93 KIEL                 KIEL                                          ↩

                                                                             ↩

Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
            Print Exit              Flip        +                       Canc ↩
```

2 Copy the transaction SAMPLE1 and call it EG1 as described in Copying Transactions in *Using Reporting Transactions* in the *User's Guide*.

3 Try changing the order of the display fields and change the selection criteria to DESTINATION-HARBOR = 'BAHAMAS' or CHARTER-YACHT-TYPE = 'INDIC-CAT 42'.

4 Sample 2: Worksheet

- Create the Transaction SAMPLE2 24

Task: List cruises sorted according to cruise starting date and show the cheapest cruise price available for each data and the cheapest cruise ofer all. Do not show cruises which cost less than 500.

This transaction uses the Worksheet to define fields for horizontal and vertical display, change field output definition, a sort field, a control field and a system function at control breaks.

Transaction Specification

Primary File	*SAG-TOURS-E-CRUISE*
Display Fields	1A: `START-DATE` 1B: `END-DATE` 2: `CRUISE-PRICE` 3: `CRUISE-ID` 4: `START-HARBOR` 5: `DESTINATION-HARBOR` 6: `CHARTER-YACHT-TYPE`
Control Field	1: `START-DATE`
System Function	`Minimum` on field `CRUISE-PRICE`
Sort Field	2: `START-HARBOR`
Selection Criteria	AT GE 500

This section covers the following topic:

- **Create the Transaction SAMPLE2**

Create the Transaction SAMPLE2

Add a Transaction

- Add a transaction called SAMPLE2 with the description Worksheet as described in Step 1 of the section *Sample 1* earlier in this chapter.

To Choose File

The reports requires data from the file *SAG-TOURS-E-CRUISE*.

- Choose the file *SAG-TOURS-E-CRUISE* as described in Step 2 of the section *Sample 1*.

To Choose Fields

The report requires data stored in the fields `CRUISE-ID`, `CHARTER-YACHT-TYPE`, `START-DATE`, `END-DATE`, `START-HARBOR`, `DESTINATION-HARBOR` and `CRUISE-PRICE`.

- Choose the fields as described in Step 3 of *Sample 1*.

To Determine Display Sequence for Vertical Output

START-DATE and END-DATE are to be displayed first with START-DATE above END-DAT E.

1 Enter a question mark (?) in the Sequence column next to the field START-DATE.

The Help: Seq Column window appears:

2 Mark Vertical Output.

```
11:56                      ***** Super Natural *****                1993-05-24
SAMPLE2                          - Worksheet -                          SN3011
                                                                             ↩

Ref DB    Field Name                +------------Help: Seq Column------------+
AA  1K    CRUISE-ID ................ ! Field: START-DATE                     ↩
!
AE  1K 2  START-DATE ............... !                                        ↩
!
AH  1K 2  END-DATE ................. ! Used to define the output sequence for !
AJ  1K    START-HARBOR ............. ! this field.                           ↩
!
AK  1K    DESTINATION-HARBOR ....... !                                        ↩
!
AP  1  2  CHARTER-YACHT-TYPE ....... !   _  Horizontal Output                 ↩
!
AT  1  2  CRUISE-PRICE ............. !   X  Vertical Output                   ↩
!
BE        _________________________ !   _  Output as Text                    ↩
!
BF        _________________________ !                                        ↩
!
BG       _________________________ +----------------------------------------+
```

3 Press Enter.

The Help: Vertical Output window appears.

4 Mark the field next to 1.

```
11:56                      ***** Super Natural *****                1993-05-24
SAMPLE2                          - Worksheet -                          SN3011
                                                                            ↩

Ref DB    Field Name                +------------He +-Help: Vertical Output--+
AA  1K    CRUISE-ID ................ ! Field: START- ! Field: START-DATE     ↩
!
AE  1K 2  START-DATE ............... !               !                       ↩
!
AH  1K 2  END-DATE ................. ! Used to defin !       Number          ↩
!
AJ  1K    START-HARBOR ............. ! this field.   !    x     1            ↩
!
AK  1K    DESTINATION-HARBOR ....... !               !    _     7            ↩
!
AP  1  2  CHARTER-YACHT-TYPE ....... !   _  Horizont !    _     8            ↩
!
AT  1  2  CRUISE-PRICE ............. !   m  Vertical !    _     9            ↩
!
BE        _________________________ !   _  Output a !    _    10            ↩
!
BF        _________________________ !               !    _    11            ↩
!
BG        _________________________ +-------------- !    _    12            ↩
!
BH        ______________________________   ___   _ !    _    13            ↩
!
BI        ______________________________   ___   _ !    _    14            ↩
!
BJ        ______________________________   ___   _ !    _    15            ↩
!
BK        ______________________________   ___   _ !                       ↩
!
                                                   +-----------------------+
```

This is the number of the column the field will be in.

5 Press Enter.

The Help: Horizontal Output window appears:

6 Mark the field next to `1A`.

```
11:59                      ***** Super Natural *****                1993-05-24
SAMPLE2                          - Worksheet -                          SN3011
                                                                            ↩

Ref DB    Field Name                +------------ +-Help: Vertical Output----+
AA  1K    CRUISE-ID ............... ! Field: STAR ! Field: START-DATE       ↩
!
AE  1K 2  START-DATE ............... !             !                         ↩
!
AH  1K 2  END-DATE ................ ! Used to def !       Number            ↩
!
AJ  1K    START-HARBOR ............ ! this field. !    X    1A              ↩
!
AK  1K    DESTINATION-HARBOR ....... !             !    _    1B              ↩
!
AP  1  2  CHARTER-YACHT-TYPE ....... !   _  Horizo !    _    1C              ↩
!
AT  1  2  CRUISE-PRICE ............ !   m  Vertic !    _    1D              ↩
!
BE        _________________________ !   _  Output !    _    1E              ↩
!
BF        _________________________ !             !    _    1F              ↩
!
BG        _________________________ +------------ !    _    1G              ↩
!
BH        ______________________________   ___    !    _    1H              ↩
!
BI        ______________________________   ___    !    _    1I              ↩
!
BJ        ______________________________   ___    !    _    1J              ↩
!
BK        ______________________________   ___    !                        ↩
!
                                                 +-------------------------+
```

This positions the field at the top of the column.

7 Press Enter.

`1A` appears in the `Sequence` column next to the field `START-DATE`.

You can also enter `1A` directly in the `Sequence` column.

8 Do the same for the field `END-DATE` but specify the position `1B`.

This positions the field `END-DATE` directly beneath the field `START-DATE` in column `1` of the report.

You can also enter `1B` directly in the `Sequence` column.

To Change Header of Vertical Output Column

The columns for vertical output have the header of the field marked with the letter nearest `A` by default. This report requires a column header which is more appropriate to the contents, so you need to change the header for the first field in the column.

1 Enter a question mark (?) in the `Definition` column next to the field `START-DATE`.

The Help: Def Column window appears:

```
08:51                      ***** Super Natural *****                1993-02-04
SAMPLE2                          - Worksheet -                          SN3011
                                                                             ↩

Ref DB    Field Name              +-------------Help: Def Column-------------+
AA  1K    CRUISE-ID ............. ! Field: START-DATE                       ↩
!
AE  1K 2  START-DATE ............ !                                          ↩
!
AH  1K 2  END-DATE ............... ! Used to modify the output definition for !
AJ  1K    START-HARBOR ........... ! this field.                             ↩
!
AK  1K    DESTINATION-HARBOR ..... !                                          ↩
!
AP  1  2  CHARTER-YACHT-TYPE ..... !   _  OD  Output Definition              ↩
!
AT  1  2  CRUISE-PRICE ........... !                                          ↩
!
BE       _________________________ +-----------------------------------------+
```

2 Mark the `Output Definition` field.

3 Press Enter.

You can also enter OD directly in the `Definition` column. The Define Field Output window appears.

4 Make the following entries in the `Heading` fields:

```
09:40                      ***** Super Natural *****                1993-02-03
SAMPLE2                          - Worksheet -                          SN3011
                                                                            ↩

Ref DB    Field Na +------------------Define Field Output--------------------+
AA  1K    CRUISE-I ! Field: START-DATE                                       ↩
!
AE  1K 2  START-DA !                                                         ↩
!
AH  1K 2  END-DATE ! Format/Length ....... N8                                ↩
!
AJ  1K    START-HA ! Numeric sign ........ _ (Y/N)                           ↩
!
AK  1K    DESTINAT ! Output length ....... 8__                               ↩
!
AP  1  2  CHARTER- !        dec. places .. _                                 ↩
!
AT  1  2  CRUISE-P ! Heading ............. START DATE____________________   ↩
!
BE        ________ !                      END DATE______________________   ↩
!
BF        ________ !                      ______________________________   ↩
!
BG        ________ ! Edit mask                                               ↩
!
BH       ________ !   ___________________________________________________ !
BI        ________ ! Suppress identical values .. _ (Y/N)                   ↩
!
BJ        ________ ! Print zero values .......... _ (Y/N)                   ↩
!
BK        ________ ! Occurrences (1)  ___ : ___  (2)  ___ : ___             ↩
!
                   !                                                         ↩
!
                 +-------------------------------------------------------+
```

5 Press Enter.

To Determine Display Sequence for Horizontal Output

The rest of the fields are to be displayed horizontally.`CRUISE-PRICE` is to be displayed first after the vertical output column, then `CRUISE-ID`, `START-HARBOR`, `DESTINATION-HARBOR`, and `CHARTER-YACHT-TYPE`. When you just enter a number in the `Sequence` column, the field is displayed horizontally by default.

1 Type 2 in the `Sequence` column next to the field `CRUISE-PRICE`.

2 Type 3 in the `Sequence` column next to the field `CRUISE-ID`.

3 Type 4 in the `Sequence` column next to the field `START-HARBOR`.

4 Type 5 in the `Sequence` column next to the field `DESTINATION-HARBOR`.

5 Type 6 in the `Sequence` column next to the field `CHARTER-YACHT-TYPE`.

To Define Control Break Processing

The report must present data sorted according to the cruise starting date and show the cheapest cruise price available for each date. However, the report should not show cruises costing less than 500.

1 Enter a question mark (?) in the `Sort/Control (S/C)` column next to the field `START-DATE`.

   The Help: S/C Column window appears.

2 Mark the `Control Field` field.

3 Mark the `Sort/Control Level` field.

   The Help: S/C Column window now has the following entries:

```
10:57                      ***** Super Natural *****                1993-02-03
SAMPLE2                          - Worksheet -                          SN3011
                                                                            ↩

Ref DB    Field Name                        +--------Help: S/C Column--------+
AA  1K    CRUISE-ID ......................   ! Field: START-DATE             !
AE  1K 2  START-DATE ......................   !                               ↩
!
AH  1K 2  END-DATE .......................   !  Type                         ↩
!
AJ  1K    START-HARBOR ...................   !    _  S  Sort Field           ↩
!
AK  1K    DESTINATION-HARBOR .............   !    x  C  Control Field        ↩
!
AP  1  2  CHARTER-YACHT-TYPE .............   !                               ↩
!
AT  1  2  CRUISE-PRICE ...................   !  Sort Order                   ↩
!
BE        _________________________________   !    _  A or 'blank'  Ascending ↩
!
BF        _________________________________   !    _  D            Descending !
BG        _________________________________   !                               ↩
!
BH        _________________________________   !  Sort/Control Level           ↩
!
BI        _________________________________   !    x  1     _  4     _  7     ↩
!
BJ        _________________________________   !    _  2     _  5     _  8     ↩
!
BK        _________________________________   !    _  3     _  6     _  9     ↩
!
                                              !                               ↩
!
                                             +--------------------------------+
```

4 Press Enter.

The entry `C1` appears in the `Sort/Control (S/C)` column next to the field `START-DATE`.

You can also enter `C1` directly in the `Sort/Control (S/C)` column. When the value of the control field `START-DATE` changes, the report is to display information concerning the field `CRUISE-PRICE`.

5 Enter a question mark (?) in the `Function (Func)` column next to the field `CRUISE-PRICE`.

The Help: Func Column window appears.

6 Mark the `System Functions` field.

```
11:33                      ***** Super Natural *****                1993-02-03
SAMPLE2                          - Worksheet -                          SN3011
                                                                            ↩

Ref DB    Field Name             +-------------Help: Func Column-------------+
AA  1K    CRUISE-ID ............ ! Field: CRUISE-PRICE                       ↩
!
AE  1K 2  START-DATE ........... !                                            ↩
!
AH  1K 2  END-DATE ............. ! Used to define special functions for this !
AJ  1K    START-HARBOR .......... ! field:                                    ↩
!
AK  1K    DESTINATION-HARBOR .... !                                           ↩
!
AP  1  2  CHARTER-YACHT-TYPE .... !   X  SF  System Functions                 ↩
!
AT  1  2  CRUISE-PRICE .......... !   _  IA  Interfield Arithmetic            ↩
!
BE        _______________________ !   _  CB  Special Break Conditions         ↩
!
BF        _______________________ !                                           ↩
!
BG       _______________________ +-----------------------------------------+
```

The Specify System Functions window appears.

7 Mark the `Min` column next to `Grand End of Report` to display the minimum value of the field `CRUISE-PRICE` in the whole report.

8 Mark the `Min` column next to `1 START-DATE` to display the minimum value of the field `CRUISE-PRICE` each time the value of the (1st) control field `START-DATE` changes.

The Specify System Functions window now has the following entries:

```
16:59                      ***** Super Natural *****                1993-02-02
SAMPLE2                          - Worksheet -                          SN3011
                                                                            ↩

+-------------------------Specify System Functions--------------------------+
! Field: CRUISE-PRICE                                                        ↩
!
!                                                                   N   N   N ↩
!
! Level  Control Field                    Cnt Tot Sum Avg Max Min Cnt Avg Min !
! Grand  End of Report                     _   _   _   _   _   X   _   _   _ ↩
!
!     1  START-DATE                        _   _   _   _   _   X   _   _   _ ↩
!
!                                          _   _   _   _   _   _   _   _   _ ↩
!
!                                          _   _   _   _   _   _   _   _   _ ↩
!
!                                          _   _   _   _   _   _   _   _   _ ↩
!
!                                          _   _   _   _   _   _   _   _   _ ↩
!
!                                          _   _   _   _   _   _   _   _   _ ↩
!
!                                          _   _   _   _   _   _   _   _   _ ↩
!
!                                          _   _   _   _   _   _   _   _   _ ↩
!
!                                          _   _   _   _   _   _   _   _   _ ↩
!
!                                                                            ↩
!
+----------------------------------------------------------------------------+
```

9 Press Enter.

A chevron (>) appears in the `Function (Func)` column next to the field `CRUISE-PRICE` to indicate that the column has been used.

Note: For further information on control break processing, see The Sort/Control (S/C) Column and The Function (Func) Column in *Working with the Worksheet* in the *User's Guide*.

To Define Further Sort Order

The cruises for each starting date are to be sorted according to their start harbor.

- Enter S2 in the `Sort/Control (S/C)` column next to the field `START-HARBOR`.

You can also use the help system by entering a question mark (?) as described above.

The Worksheet now has the following entries:

```
09:21                      ***** Super Natural *****                1993-02-04
SAMPLE2                          - Worksheet -                          SN3011
                                                                            ↩

Ref DB    Field Name                          Seq   S/C  Func Def  Info Del   ↩

AA  1K    CRUISE-ID ......................    3__   ___   __   __   __   __   ↩

AE  1K 2  START-DATE ....................    1A_   C1_   __   __   __   __   ↩

AH  1K 2  END-DATE ......................    1B_   ___   __   __   __   __   ↩

AJ  1K    START-HARBOR ..................    4__   S2_   __   __   __   __   ↩

AK  1K    DESTINATION-HARBOR ............    5__   ___   __   __   __   __   ↩

AP  1  2  CHARTER-YACHT-TYPE ............    6__   ___   __   __   __   __   ↩

AT  1  2  CRUISE-PRICE ..................    2__   ___   >_   __   __   __   ↩

BE        ________________________________   ___   ___   __   __   __   __   ↩

BF        ________________________________   ___   ___   __   __   __   __   ↩

BG        ________________________________   ___   ___   __   __   __   __   ↩

BH        ________________________________   ___   ___   __   __   __   __   ↩

BI        ________________________________   ___   ___   __   __   __   __   ↩

BJ        ________________________________   ___   ___   __   __   __   __   ↩

BK        ________________________________   ___   ___   __   __   __   __   ↩

                                                                            ↩

                                                                            ↩

Fill in required definitions                                                ↩

Command ===>                                                                ↩

Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help  Next  Exit  Field Incl  Flip  -     +           Sel   Run   Canc ↩
```

To Define Selection Criteria

1 Issue the `SELECTION` command. You can also abbreviate this command to `SEL`.

The Selection Editor appears. The report requires information on cruises costing more than 500.

2 Enter AT GE 500 in the editor area.

`AT` is the Super Natural field reference for the field `CRUISE-PRICE`. You can always use field references instead of field names in the full-screen editors. The field references for fields in the Field Name column of the Worksheet are listed next to them in the `Field Reference (Ref)` column.

`GE` is the operator `Greater Equals (greater than or equal to)`. Instead of `GE`, you can use the special characters >=.

To Run the Transaction

1 Run the transaction as described in Step 6 of the section *Sample 1*.

The Report Line Length window appears because you have chosen too many fields to be displayed together horizontally on one screen:

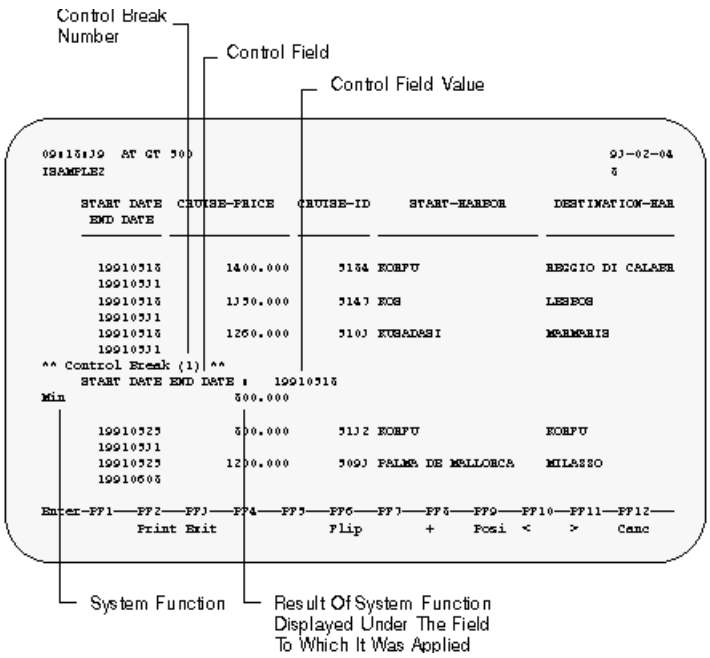
```
10:13                      ***** Super Natural *****                1993-02-03
CRUI2                            - Worksheet -                          SN3011
                                                                            ↩

Ref DB    Field Name     +-----------------Report Line Length-----------------+
AA  1K    CRUISE-ID .... !                                                    ↩
!
AE  1K 2  START-DATE ... ! The selected fields required a line size of .. 108 !
AF  1  2  START-TIME ... ! The field headers required a line size of .... 109 !
AJ  1K    START-HARBOR . ! The available Online  line size at present ... 79 ↩
!
AK  1K    DESTINATION-HA !                                                    ↩
!
AP  1  2  CHARTER-YACHT- !   _  Enlarge Available Line Size                   ↩
!
AT  1  2  CRUISE-PRICE . !   _  Change to Report Type Vertical List           ↩
!
BE        _______________ !   _  Truncate Headers                            ↩
!
BF        _______________ !   _  Remove Excess Fields                        ↩
!
BG        _______________ !   _  Remove Excess Fields and Truncate Headers    ↩
!
BH        _______________ !   _  Modify Transaction                          ↩
!
BI        _______________ !                                                   ↩
!
BJ       _______________ +---------------------------------------------------+
BK        ________________________________   ___   ___   __   __   __   __   ↩
```

2 Mark the `Enlarge available line size` option.

3 Press Enter.

The report is generated. Part of the resulting report is shown below:



Because you chose the option `Enlarge Available Line Size`, the report is wider than the screen.

4 Use PF11 and PF10 to shift to the left and right in the report.

5 Use PF9 to position the field at cursor position to the left-hand side of the screen.

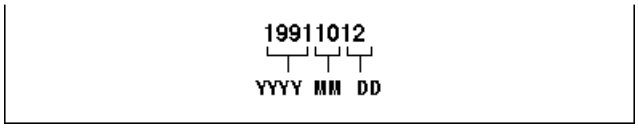
5 Sample 3: User Fields, Calculation and Logical Conditions Editors

- Create the Transaction SAMPLE3 41

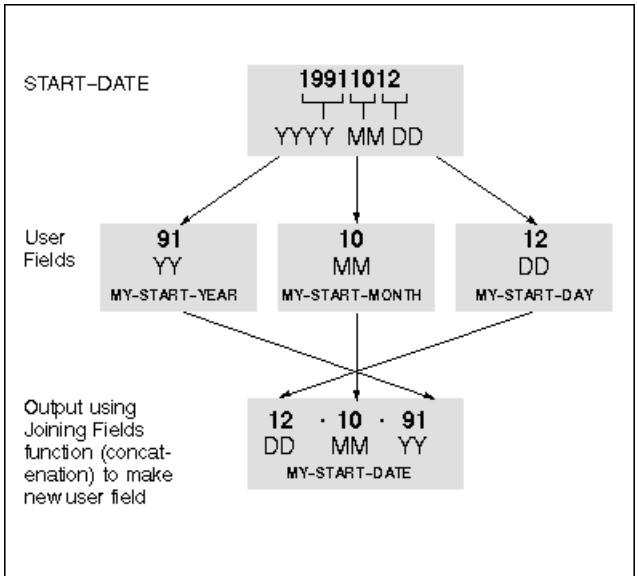
Task: List cruises which use charter yacht type ATLANTIC 29. Display end date of cruise under start date and present the information in the format DD.MM.YY. Display the text 'too late' instead of the data sets (files) for cruises which start after 7.1.1991.

The steps in this transaction are performed in a logical order. The order in which the steps are carried out is different to the order in the previous sample transactions.

The data in the fields `START-DATE` and `END-DATE` is stored in the format YYYYMMDD which is difficult to read at a glance (you can confirm this by adding a report using the file *SAG-TOURS-E-CRUISE* which has the selection criteria AA and the display fields `START-DATE` and `END-DATE`). The following is an example where Y = year, M= month and D = day:



The report requires that the date be presented with the format DD.MM.YY. To do this, you must create three user fields from the field `START-DATE`: one with the year information, one with the month information and one with the day information. You then join the user fields together in the order day, month, year with periods (.) using the `Joining Fields (Concatenation)` function in the Calculation Editor as shown in the following diagram:



You then do the same for the field `END-DATE`.

Transaction Specification

Primary File	*SAG-TOURS-E-CRUISE*
User Fields	*MY-START-DATE* *MY-START-YEAR* *MY-START-MONTH* *MY-START-DAY* *MY-END-DATE* *MY-END-YEAR* *MY-END-MONTH* *MY-END-DAY*
Display Fields	1: `CRUISE-ID` 2: `START-HARBOR` 3: `DESTINATION-HARBOR` 4A: `MY-START-DATE` 4B: `MY-END-DATE`
Selection Criteria	CHARTER-YACHT-TYPE = 'ATLANTIC 29'
CalculationStatement	MY-START-DATE=MY-START-DAY!'.'!MY-START-MONTH!'.'!MY-START-YEAR MY-END-DATE=MY-END-DAY!'.'!MY-END-MONTH!'.'!MY-END-YEAR
Logical Conditions Statement	1 I < START-DATE GT 19910701 1 T < MY-START-DATE = 'TOO LATE 1 T < MY-END-DATE = ' '

This section covers the following topics:

- **Create the Transaction SAMPLE3**

Create the Transaction SAMPLE3

To add a transaction

1 Issue the `ADD TRANSACTION SAMPLE3` command.

The Add Transaction window appears.

2 Type User Fields and Editors in the `Description` field (optional).

To Choose a File

The report requires data from the file *SAG-TOURS-E-CRUISE*.

1 Type *SAG-TOURS-E-CRUISE* in the `File Name` field.

2 Press Enter.

The Worksheet appears.

To Choose Fields

The report requires data stored in the fields `CRUISE-ID`, `START-HARBOR` and `DESTINATION-HARBOR`.

- Type `CRUISE-ID`, `START-HARBOR` and `DESTINATION-HARBOR` beneath each other in the Field Name column.

  Or:

  Choose the fields using the `Asterisk List function` as described in Step 3 of the section *Sample 1*.

To Determine Display Sequence for Horizontal Output

1. Type 1 in the `Sequence` column next to the field `CRUISE-ID`.
2. Type 2 in the `Sequence` column next to the field `START-HARBOR`.
3. Type 3 in the `Sequence` column next to the field `DESTINATION-HARBOR`.

To Define User Fields

The report requires the following user fields as described at the beginning of this section: - `MY-START-DATE - MY-START-YEAR - MY-START-MONTH - MY-START-DAY - MY-END-DATE - MY-END-YEAR - MY-END-MONTH - MY-END-DAY`

1. Enter `MY-START-DATE` in the Field Name column.

   The Define User Field window appears.
2. Type A in the `Format` field.
3. Type 8 in the `Length` field:

```
11:35                      ***** Super Natural *****                1998-02-09
SAMPLE3                          - Worksheet -                          SN3011
                                                                            ↩

Ref DB    Field Name     +-----------------Define User Field-----------------+
AA  1K     CRUISE-ID ..... ! Field: MY-START-DATE                            ↩
!
AJ  1K     START-HARBOR .. !                                                 ↩
!
AK  1K    DESTINATION-HAR ! Name or value .. MY-START-DATE___________________ !
BE         my-start-date__ ! Format ......... a                              ↩
!
BF         _______________ ! Length ......... 8__                            ↩
!
BG         _______________ ! Dec. places ....                                ↩
!
BH        _______________ ! Subfield of .... ________________________________ !
BI         _______________ ! Offset ......... ___                            ↩
!
BJ         _______________ ! Dynamic input .. _                              ↩
!
BK         _______________ !                                                 ↩
!
BL        _______________ +-------------------------------------------------+
```

4 Press Enter.

The user field `MY-START-DATE` is created.

5 Enter `MY-START-YEAR` in the `Field Name` column.

The Define User Field window appears.

6 Type A in the `Format` field.

7 Type 2 in the `Length` field:

This user field is going to take part of the value of the database field `START-DATE`.

8 Type `START-DATE` in the `Subfield Of` field.

This user field is going to take the third (3rd) and fourth (4th) characters of the field `START-DATE`, so you must tell Super Natural to ignore the first two characters.

9 Type 2 in the `Offset` field.

```
11:50                      ***** Super Natural *****                1998-02-09
SAMPLE3                          - Worksheet -                         SN3011
                                                                            ↩

Ref DB    Field Name     +-----------------Define User Field-----------------+
AA  1K    CRUISE-ID ..... ! Field: MY-START-YEAR                             ↩
!
AJ  1K    START-HARBOR .. !                                                  ↩
!
AK  1K   DESTINATION-HAR ! Name or value .. MY-START-YEAR___________________ !
BE   U    MY-START-DATE . ! Format ......... a                               ↩
!
BF        my-start-year__ ! Length ......... 2__                             ↩
!
BG        _______________ ! Dec. places .... _                               ↩
!
BH       _______________ ! Subfield of .... start-date______________________ !
BI        _______________ ! Offset ......... 2__                             ↩
!
BJ        _______________ ! Dynamic input .. _                               ↩
!
BK        _______________ !                                                  ↩
!
BL       _______________ +--------------------------------------------------+
```

10 Press Enter.

The user field `MY-START-YEAR` is created.

11 Enter `MY-START-MONTH` in the `Field Name` column.

The `Define User Field` window appears.

12 Type A in the `Format` field.

13 Type 2 in the `Length` field:

This user field is also going to take part of the value of the database field `START-DATE`.

14 Type `START-DATE` in the `Subfield Of` field.

This user field is going to take the fifth (5th) and sixth (6th) characters of the field `START-DATE`, so you must tell Super Natural to ignore the first four characters.

15 Type 4 in the `Offset` field.

```
11:54                      ***** Super Natural *****                1998-02-09
SAMPLE3                          - Worksheet -                          SN3011
                                                                            ↩

Ref DB    Field Name     +-----------------Define User Field-----------------+
AA  1K    CRUISE-ID ..... ! Field: MY-START-MONTH                            ↩
!
AJ  1K    START-HARBOR .. !                                                  ↩
!
AK  1K   DESTINATION-HAR ! Name or value .. MY-START-MONTH_________________ !
BE   U    MY-START-DATE . ! Format ......... a                               ↩
!
BF   U    MY-START-YEAR . ! Length ......... 2__                             ↩
!
BG        my-start-month_ ! Dec. places .... _                               ↩
!
BH       _______________ ! Subfield of .... start-date_____________________ ↩
!
BI        _______________ ! Offset ......... 4__                             ↩
!
BJ        _______________ ! Dynamic input .. _                               ↩
!
BK        _______________ !                                                  ↩
!
BL       _______________ +--------------------------------------------------+
```

16 Press Enter.

The user field `MY-START-MONTH` is created.

17 Enter `MY-START-DAY` in the `Field Name` column.

The Define User Field window appears.

18 Type A in the `Format` field.

19 Type 2 in the `Length` field:

This user field is also going to take part of the value of the database field `START-DATE`.

20 Type `START-DATE` in the `Subfield Of` field.

This user field is going to take the seventh (7th) and eighth (8th) characters of the field `START-DATE`, so you must tell Super Natural to ignore the first six characters.

21 Type 6 in the `Offset`field.

```
11:59                      ***** Super Natural *****                1998-02-09
SAMPLE3                          - Worksheet -                         SN3011
                                                                            ↩

Ref DB    Field Name     +-----------------Define User Field-----------------+
AA  1K     CRUISE-ID ..... ! Field: MY-START-DAY                              ↩
!
AJ  1K     START-HARBOR .. !                                                  ↩
!
AK  1K    DESTINATION-HAR ! Name or value .. MY-START-DAY____________________ !
BE   U     MY-START-DATE . ! Format ......... a                               ↩
!
BF   U     MY-START-YEAR . ! Length ......... 2__                             ↩
!
BG   U     MY-START-MONTH  ! Dec. places .... _                               ↩
!
BH        my-start-day___ ! Subfield of .... start-date______________________ !
BI         _______________ ! Offset ......... 6__                             ↩
!
BJ         _______________ ! Dynamic input .. _                               ↩
!
BK         _______________ !                                                  ↩
!
BL        _______________ +--------------------------------------------------+
```

22 Press Enter.

The user field `MY-START-DAY` is created.

23 Create the other user fields as shown in the table below:

Field	Format	Length	Subfield Of	Offset
MY-END-DATE	A	8		
MY-END-YEAR	A	2	END-DATE	2
MY-END-MONTH	A	2	END-DATE	4
MY-END-DAY	A	2	END-DATE	6

To Determine Display Sequence for Vertical Output

The field `MY-START-DATE` is to be displayed above the field `MY-END-DATE` and to the right of the other display fields.

1 Type 4A in the `Sequence` column next to the field `MY-START-DATE`.

2 Type 4B in the `Sequence` column next to the field `MY-END-DATE`.

To Change Header of Vertical Output Column

1 Enter OD in the `Definition (Def)` column next to the field`MY-START-DATE`.

The Define User Field Output window appears.

2 Enter Cruise From To in the Heading fields as shown in the following diagram:

```
14:01                      ***** Super Natural *****                1998-02-09
SAMPLE3                          - Worksheet -                          SN3011
                                                                            ↩

Ref DB   Field Na +-----------------Define User Field Output-----------------+
AA  1K    CRUISE-I ! Field: MY-START-DATE                                    ↩
!
AE  1K 2  START-DA !                                                         ↩
!
AH  1K 2  END-DATE ! Format/Length ....... A8                                ↩
!
AJ  1K    START-HA ! Numeric sign ........ _ (Y/N)                           ↩
!
AK  1K    DESTINAT ! Output length ....... 8__                               ↩
!
AP  1  2  CHARTER- !        dec. places .. _                                 ↩
!
BE   U    MY-START ! Heading ............. CRUISE_________________________   ↩
!
BF   U    MY-START !                        FROM_________________________    ↩
!
BG   U    MY-START !                        TO___________________________    ↩
!
BH   U    MY-START ! Edit mask                                               ↩
!
BI   U   MY-END-D !   ___________________________________________________ !
BJ   U    MY-END-Y ! Suppress identical values .. _ (Y/N)                    ↩
!
BK   U    MY-END-M ! Print zero values .......... _ (Y/N)                    ↩
!
BL   U    MY-END-D !                                                         ↩
!
                  +-------------------------------------------------------+
```

The Worksheet now has the following entries:

```
13:25                      ***** Super Natural *****                1998-02-09
SAMPLE3                          - Worksheet -                          SN3011
                                                                            ↩

Ref DB    Field Name                        Seq   S/C  Func Def  Info Del   ↩

AA  1K    CRUISE-ID ......................   1__   ___   __   __   __   __   ↩

AJ  1K    START-HARBOR ...................   2__   ___   __   __   __   __   ↩

AK  1K    DESTINATION-HARBOR .............   3__   ___   __   __   __   __   ↩

BE   U    MY-START-DATE ..................   4A_   ___   __   __   __   __   ↩

BF   U    MY-START-YEAR ..................   ___   ___   __   __   __   __   ↩

BG   U    MY-START-MONTH .................   ___   ___   __   __   __   __   ↩

BH   U    MY-START-DAY ...................   ___   ___   __   __   __   __   ↩

BI   U    MY-END-DATE ....................   4B_   ___   __   __   __   __   ↩

BJ   U    MY-END-YEAR ....................   ___   ___   __   __   __   __   ↩

BK   U    MY-END-MONTH ...................   ___   ___   __   __   __   __   ↩

BL   U    MY-END-DAY .....................   ___   ___   __   __   __   __   ↩

BM        ________________________________   ___   ___   __   __   __   __   ↩

BN        ________________________________   ___   ___   __   __   __   __   ↩

BO        ________________________________   ___   ___   __   __   __   __   ↩

                                                                            ↩

                                                                            ↩

Fill in required definitions                                                ↩

Command ===>                                                                ↩

Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help  Next  Exit  Field Incl  Flip  -     +           Sel   Run   Canc ↩
```

Notice that the user fields are marked with a 'U' in the `DB Column`.

To Define Selection Criteria

The report requires data for cruises of charter yacht type ATLANTIC 29.

1 Issue the `SELECTION` command.

   You can abbreviate this command to `SEL`.

   The Selection Editor appears.

2 Enter CHARTER-YACHT-TYPE = 'ATLANTIC 29' in the editor area.

Note: The field `CHARTER-YACHT-TYPE` now appears in the `Field Name` column of the Worksheet.

To Present Start Date and End Date of Cruise in the Format DD.MM.YY.

1 Issue the `CALCULATION` command. You can abbreviate this command to `CAL`.

   The Calculation Editor appears. The first result field in the editor area will be the user field `MY-START-DATE` and will be composed of the user fields `MY-START-YEAR`, `MY-START-MONTH` and `MY-START-DAY` separated by periods (.). You use the `Joining Fields (concatenation)` function to join the fields and periods.

2 Type MY-START-DATE = MY-START-DAY.

3 Type the Joining Fields operator valid for your site.

   If you do not know which operator to use, ask your Super Natural administrator.

   Or:

   Issue the `CONTINUE` command. This command is allocated to PF10.

   The Fields - Operators window appears.

4 Select `Select Operator`.

```
14:24                      ***** Super Natural *****                1998-02-10
SAMPLE3                     - Calculation Editor -                     SNZUL-C
                                                                              ↩

                                                     +---Fields - Operators---+
      1  < MY-START-DATE=MY-START-DAY                 !                       ↩
!
      2  <                                            !   _  Invoke Field List !
      3  <                                             !   _  ROUNDED          ↩
!
      4  <                                            !   _  Define User Field !
      5  <                                             !   x  Select Operator  ↩
!
      6  <                                             !                       ↩
!
      7  <                                             ! Mark to replace:      ↩
!
      8  <                                             !                       ↩
!
      9  <                                            +-----------------------+
```

5 Press Enter.

The Joining Fields window appears.

6 Select the `joining fields operator`.

```
12:09                      ***** Super Natural *****                1998-05-24
SAMPLE3                     - Calculation Editor -                     SNZUL-C
                                                                              ↩

                                           +---------Joining Field----------+
      1  < MY-START-DATE=MY-START-DAY        !                              ↩
!
      2  <                                   !   _  !  Joining Field Operator !
      3  <                                    !                              ↩
!
      4  <                                    ! Mark to replace: _            ↩
!
      5  <                                    !                              ↩
!
      6  <                                   +--------------------------------+
      7  <                                             ! Mark to replace:      ↩
!
      8  <                                             !                       ↩
!
      9  <                                            +-----------------------+
```

7 Press Enter.

The joining fields operator valid at your site is entered at the end of the calculation statement.

8 Issue the `CONTINUE` command. This command is allocated to PF10.

The Field or Value window appears.

9 Select `Alphanumeric Constant`.

```
14:34                      ***** Super Natural *****                1998-02-09
SAMPLE3                     - Calculation Editor -                     SNZUL-C
                                                                              ↩

                                              +---------Field or Value----------+
      1  < MY-START-DATE = MY-START-DAY !   !                                  ↩
!
      2  <                                   !   X  Alphanumeric Constant       ↩
!
      3  <                                   !   _  Hex Constant               ↩
!
      4  <                                  !   _  Define Dynamic Input Field !
      5  <                                   !   _  Invoke Field List          ↩
!
      6  <                                   !                                 ↩
!
      7  <                                  +---------------------------------+
```

10 Press Enter.

11 Enter a period (.) in the Alphanumeric Constant window which appears.

A period (.) is entered in quotation marks (' ') at the end of the calculation statement.

For further information on constants see *Constants in Fields* in the *User's Guide*.

12 Type the rest of the calculation statement as shown in the following diagram using the `joining fields` operator valid at your site.

```
14:06                      ***** Super Natural *****                1998-02-09
SAMPLE3                     - Calculation Editor -                     SNZUL-C
                                                                              ↩
                                                                              ↩
      1  < MY-START-DATE=MY-START-DAY!'.'!MY-START-MONTH!'.'!          >    1
      2  < MY-START-YEAR                                               >    2
      3  < MY-END-DATE=MY-END-DAY!'.'!MY-END-MONTH!'.'!                >    3
      4  < MY-END-YEAR                                                 >    4
      5  <                                                             >    5
      6  <                                                             >    6
      7  <                                                             >    7
      8  <                                                             >    8
      9  <                                                             >    9
     10  <                                                             >   10
     11  <                                                             >   11
     12  <                                                             >   12
     13  <                                                             >   13
     14  <                                                             >   14
     15  <                                                             >   15
                                                                              ↩
                                                                              ↩
Command ===>                                                                  ↩

Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help  Next  Exit  Field Check Flip  -     +           Cont  Run   Canc ↩
```

For further information on joining fields and the joining fields operator, see *Joining Fields* in Editors in the *User's Guide*.

To Define Logical Conditions

The report requires that the text 'Too Late' be displayed in the Cruise/To/From column for cruises which start later than July 1st 1991.

1 Issue the `LOGIC` command. You can abbreviate this command to `LOG`.

   The Logical Conditions Editor appears.

2 Type START-DATE GT 19910701 in the `IF` line.

   The field `START-DATE` now appears in the Field Name column in the Worksheet.

3 Type MY-START-DATE = 'TOO LATE' in the THEN line.

4 Tab to the Clause Type column (on the right).

5 Overtype the `E` which is already there with a `T` to create a new THEN line.

6 Press Enter.

7 Type MY-END-DATE = ' ' in the new THEN line.

The Logical Conditions Editor now contains the following entries:

```
16:11                      ***** Super Natural *****                1998-02-09
SAMPLE3                  - Logical Conditions Editor -                 SNZUL-L
                                                                            ↩
                                                                            ↩
  1 I    < START-DATE GT 19910701                                     > I 1
  1 T    < MY-START-DATE = 'TOO LATE'                                 > T 1
  1 T    < MY-END-DATE = ' '                                          > T 1
         <                                                             > _  ↩
         <                                                             > _  ↩
         <                                                             > _  ↩
         <                                                             > _  ↩
         <                                                             > _  ↩
         <                                                             > _  ↩
         <                                                             > _  ↩
         <                                                             > _  ↩
         <                                                             > _  ↩
         <                                                             > _  ↩
         <                                                             > _  ↩
         <                                                             > _  ↩
                                                                            ↩
Define logic conditions or use CONTINUE                                     ↩
Command ===>                                                                ↩
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help  Next  Exit  Field Check Flip  -     +           Cont  Run   Canc ↩
```

To Run the Transaction

- Run the transaction as described in Step 6 of the section *Sample 1* earlier in this section.

  The report is generated. Part of the resulting report is shown below:

```
16:16:05  CHARTER-YACHT-TYPE = 'ATLANTIC 29'                        1998-02-09
ISAMPLE3                                                               4     ↩
                                                                             ↩
CRUISE-ID     START-HARBOR      DESTINATION-HARBOR   CRUISE                 ↩
                                                     FROM                   ↩
                                                      TO                    ↩
--------- -------------------- -------------------- --------                ↩
                                                                             ↩
       97 KIEL                 KIEL                 8.6.91                  ↩
                                                    22.6.91                  ↩
       98 KIEL                 KIEL                 22.6.91                 ↩
                                                    29.6.91                 ↩
       99 KIEL                 KIEL                 29.6.91                 ↩
                                                    10.8.91                 ↩
      100 KIEL                 KIEL                 TOO LATE                ↩
                                                                            ↩
      101 KIEL                 KIEL                 TOO LATE                ↩
                                                                            ↩
      102 KIEL                 KIEL                 TOO LATE                ↩
                                                                            ↩
                                                                            ↩
                                                                            ↩
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
            Print Exit              Flip        +                       Canc ↩
```

6 Sample 4: Modes and User File

- To create the transaction SAMPLE4: 58

Task: Show all cruises which use a yacht of charter yacht type ATLANTIC 29 listed in order of cruise starting date. Show how many cruises there are in each month.

1. Present the data in a list
2. Present the data with one record on each page
3. Summarize the data
4. Create a user file containing the data

This transaction uses the Selection Editor, a control field, a system function and special break conditions to select the data required. The transaction uses different transaction modes to present data as required and to create a user file which contains the report data.

The steps in this transaction are performed in a logical order. The order in which the steps are carried out is different to the order in the previous sample transactions.

Transaction Specification

Primary File	*SAG-TOURS-E-CRUISE*
Display Fields	1: `CRUISE-ID` 2: `START-HARBOR` 3: `DESTINATION-HARBOR` 4: `START-DATE`
Selection Criteria	CHARTER-YACHT-TYPE = 'ATLANTIC 29'
Control Field	`START-DATE`
Special Break Conditions	First 'n' characters: 6
System Functions	Count `CRUISE-ID`

This section covers the following topics:

- **To create the transaction SAMPLE4:**

To create the transaction SAMPLE4:

To Add a Transaction

1 Issue the `ADD TRANSACTION SAMPLE4` command.

The Add Transaction window appears.

2 Type Modes and User File in the `Description` field (optional).

To Choose a File

The report requires data from the file *SAG-TOURS-E-CRUISE*.

1 Type *SAG-TOURS-E-CRUISE* in the `File Name` field.

2 Press Enter.

The Worksheet appears.

To Choose Fields

The report requires data stored in the fields `CRUISE-ID`, `START-DATE`, `START-HARBOR` and `DESTINATION-HARBOR`.

- Type `CRUISE-ID`, `START-DATE`, `START-HARBOR` and `DESTINATION-HARBOR` beneath each other in the Field Name column..

  Or:

  Choose the fields using the `Asterisk List` function as described in Step 3 in *Sample 1*.

To Determine Display Sequence for Horizontal Output

1 Type 1 in the Sequence column next to the field `CRUISE-ID`.

2 Type 2 in the Sequence column next to the field `START-HARBOR`.

3 Type 3 in the Sequence column next to the field `DESTINATION-HARBOR`.

4 Type 4 in the Sequence column next to the field `START-DATE`.

To Define Control Break Processing

The report requires all cruises which use a yacht of charter yacht type ATLANTIC 29 listed in order of cruise starting date. The number of cruises per month is to be displayed.

1 Type C1 in the `Sort/Control (S/C)` column next to the field `START-DATE`.

The cruises will be listed in order of their starting date.

The data in the field `START-DATE` is stored in the format YYYYMMDD where the first four characters show the year, the third (3rd) and fourth (4th) the month and the fifth (5th) and sixth (6th) the day. You can use the `Special Break Conditions` function to define a control break when the first six characters of the field `START-DATE` change.

2 Enter CB in the `Function (Func)` column next to the field `START-DATE`.

The Special Break Conditions window appears.

3 Enter 6 in the First 'n' Characters field.

```
11:14                      ***** Super Natural *****                1998-02-18
SAMPLE4                          - Worksheet -                          SN3011
                                                                            ↩

Ref DB    Field Name             +---------Special Break Conditions----------+
AA  1K    CRUISE-ID ............ ! Field: START-DATE                        ↩
!
AE  1K 2  START-DATE ........... !                                           ↩
!
AJ  1K    START-HARBOR .......... ! Format .. N                              ↩
!
AK  1K    DESTINATION-HARBOR .... ! Length .. 8                              ↩
!
BE        ______________________ !                                           ↩
!
BF       _______________________ ! Perform control break after change of the !
BG        ______________________ ! first 'n' field characters.               ↩
!
BH        ______________________ ! Do not enter any value if the complete    ↩
!
BI        ______________________ ! length should be taken.                   ↩
!
BJ        ______________________ !                                           ↩
!
BK        ______________________ ! First 'n' characters: 6_                  ↩
!
BL        ______________________ !                                           ↩
!
BM       _______________________ +------------------------------------------+
```

A control break is defined when the month value of the field `START-BREAK` changes.

4 Enter SF in the `Function (Func)` column next to the field `CRUISE-ID`.

The Specify System Functions window appears.

5 Mark the field next to the field `START-DATE` and below the field `Cnt`.

```
11:14                      ***** Super Natural *****                1998-02-18
SAMPLE4                          - Worksheet -                          SN3011
                                                                            ↩

+-------------------------Specify System Functions--------------------------+
! Field: CRUISE-ID                                                          ↩
!
!                                                                   N   N   N ↩
!
! Level  Control Field                    Cnt Tot Sum Avg Max Min Cnt Avg Min !
! Grand  End of Report                     _   _   _   _   _   _   _   _   _ ↩
!
!     1  START-DATE                        X   _   _   _   _   _   _   _   _ ↩
!
!                                          _   _   _   _   _   _   _   _   _ ↩
!
!                                          _   _   _   _   _   _   _   _   _ ↩
!
!                                          _   _   _   _   _   _   _   _   _ ↩
!
!                                          _   _   _   _   _   _   _   _   _ ↩
!
!                                          _   _   _   _   _   _   _   _   _ ↩
!
!                                          _   _   _   _   _   _   _   _   _ ↩
!
!                                          _   _   _   _   _   _   _   _   _ ↩
!
!                                          _   _   _   _   _   _   _   _   _ ↩
!
!                                                                            ↩
!
+----------------------------------------------------------------------------+
```

6 Press Enter.

The system function `Count` is carried out for the field `CRUISE-ID` at each control break of the field `START-DATE`.

To Define Selection Criteria

The report requires data for cruises of charter yacht type ATLANTIC 29.

1 Enter `SEL` in the command line.

The Selection Editor appears.

2 Enter CHARTER-YACHT-TYPE = 'ATLANTIC 29' in the editor area.

To Present the Data in a List

- Press PF11 (RUN).

  The report is generated. Part of the resulting report is shown below:

```
11:21:10  CHARTER-YACHT-TYPE = 'ATLANTIC 29'                        1998-02-18
ISAMPLE4                                                               3     ↩
                                                                             ↩
     CRUISE-ID     START-HARBOR      DESTINATION-HARBOR  START-DATE          ↩
     --------- -------------------- -------------------- ----------          ↩
                                                                             ↩
            85 KIEL                 KIEL                   19910622          ↩
            99 KIEL                 KIEL                   19910629          ↩
           111 KIEL                 KIEL                   19910629          ↩
** Control Break (1) **                                                      ↩
     START-DATE :   19910629                                                 ↩
Cnt         9                                                               ↩
                                                                             ↩
           112 KIEL                 KIEL                   19910713          ↩
           113 KIEL                 KIEL                   19910720          ↩
            86 KIEL                 KIEL                   19910727          ↩
** Control Break (1) **                                                      ↩
     START-DATE :   19910727                                                 ↩
Cnt         3                                                               ↩
                                                                             ↩
           114 KIEL                 KIEL                   19910803          ↩
                                                                             ↩
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
            Print Exit              Flip        +                       Canc ↩
```

The field `CHARTER-YACHT-TYPE` now appears in the Field Name column of the Worksheet.

The Worksheet now has the following entries:

```
11:15                      ***** Super Natural *****                1998-02-18
SAMPLE4                          - Worksheet -                          SN3011
                                                                            ↩

Ref DB    Field Name                        Seq   S/C  Func Def  Info Del   ↩

AA  1K    CRUISE-ID ......................   1__   ___   >_   __   __   __   ↩

AE  1K 2  START-DATE ......................   4__   C1_   >_   __   __   __   ↩

AJ  1K    START-HARBOR ..................   2__   ___   __   __   __   __   ↩

AK  1K    DESTINATION-HARBOR ............   3__   ___   __   __   __   __   ↩

AP  1  2  CHARTER-YACHT-TYPE ............   ___   ___   __   __   __   __   ↩

BE        ________________________________  ___   ___   __   __   __   __   ↩

BF        ________________________________  ___   ___   __   __   __   __   ↩

BG        ________________________________  ___   ___   __   __   __   __   ↩

BH        ________________________________  ___   ___   __   __   __   __   ↩

BI        ________________________________  ___   ___   __   __   __   __   ↩

BJ        ________________________________  ___   ___   __   __   __   __   ↩

BK        ________________________________  ___   ___   __   __   __   __   ↩

BL        ________________________________  ___   ___   __   __   __   __   ↩

BM        ________________________________  ___   ___   __   __   __   __   ↩

                                                                            ↩

                                                                            ↩

System functions have been updated                                          ↩

Command ===>                                                                ↩

Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help  Next  Exit  Field Incl  Flip  -     +          Sel   Run   Canc ↩
```

To Present the Data with One Record on Each Page.

You use the transaction mode `Report Type VERTICAL LIST` to present data with one record on each page as the report requires.

1 Press PF8 (`EXIT`) to leave the report.

   The Worksheet appears.

2 Issue the `MODES` command.

   The Transaction Modes Reporting window appears.

3 Enter V in the `Report Type` field as in the following example:

```
11:39                      ***** Super Natural *****                1998-02-18
SAMPLE4                          - Worksheet -                          SN3011
                                                                            ↩

Ref DB    Field Name                    +----Transaction Modes Reporting-----+
AA  1K    CRUISE-ID ..................... !                                   ↩
!
AE  1K 2  START-DATE .................... ! Data Selection .. F  Full-screen  ↩
!
AJ  1K    START-HARBOR ................. !                                   ↩
!
AK  1K    DESTINATION-HARBOR ........... ! Data Change ..... N  None         ↩
!
AP  1  2  CHARTER-YACHT-TYPE ........... !                                   ↩
!
BE        ________________________________ ! Report Type ..... V  Vertical list !
BF        ________________________________ ! Report Level .... D  Detailed     ↩
!
BG        ________________________________ !                                   ↩
!
BH        ________________________________ ! Destination ..... S  Screen       ↩
!
BI        ________________________________ !                                   ↩
!
BJ        ________________________________ ! Run Mode ........ O  Online       ↩
!
BK        ________________________________ !                                   ↩
!
BL        ________________________________ ! Batch printer ... 0  (0 - 31)     ↩
!
BM        ________________________________ ! RJE available ... N  (Y/N)        ↩
!
                                            !                                   ↩
!
                                          +-----------------------------------+
```

4 Press PF11 (RUN).

The report is generated. Part of the resulting report is shown below:

```
11:22:00  CHARTER-YACHT-TYPE = 'ATLANTIC 29'                        1998-02-18
ISAMPLE4                                                               1     ↩
                                                                             ↩
CRUISE-ID ...................... 79                                         ↩
START-HARBOR ................... KIEL                                       ↩
DESTINATION-HARBOR ............. KIEL                                       ↩
START-DATE ..................... 19910330                                   ↩
                                                                             ↩
                                                                             ↩
                                                                             ↩
                                                                             ↩
                                                                             ↩
                                                                             ↩
                                                                             ↩
                                                                             ↩
                                                                             ↩
                                                                             ↩
                                                                             ↩
                                                                             ↩
                                                                             ↩
                                                                             ↩
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
            Print Exit              Flip        +                       Canc ↩
```

To Summarize the Data

You can just display the results of the system functions which are carried out at control breaks using the Report Level `SUMMARY`.

1 Press PF2 (`EXIT`) to leave the report.

   The Worksheet appears.

2 Issue the `MODES` command.

   The Transaction Modes Reporting window appears.

3 Enter L in the `Report Type` field.

4 Enter S in the `Report Level` field as in the following example:

```
11:39                      ***** Super Natural *****                1998-02-18
SAMPLE4                          - Worksheet -                          SN3011
                                                                            ↩

Ref DB    Field Name                    +----Transaction Modes Reporting-----+
AA  1K    CRUISE-ID ..................... !                                  ↩
!
AE  1K 2  START-DATE .................... ! Data Selection .. F  Full-screen  ↩
!
AJ  1K    START-HARBOR ................. !                                  ↩
!
AK  1K    DESTINATION-HARBOR ........... ! Data Change ..... N  None        ↩
!
AP  1  2  CHARTER-YACHT-TYPE ........... !                                  ↩
!
BE        ________________________________ ! Report Type ..... L  List        ↩
!
BF        ________________________________ ! Report Level .... S  Summary     ↩
!
BG        ________________________________ !                                 ↩
!
BH        ________________________________ ! Destination ..... S  Screen      ↩
!
BI        ________________________________ !                                 ↩
!
BJ        ________________________________ ! Run Mode ........ O  Online      ↩
!
BK        ________________________________ !                                 ↩
!
BL        ________________________________ ! Batch printer ... 0  (0 - 31)    ↩
!
BM        ________________________________ ! RJE available ... N  (Y/N)       ↩
!
                                            !                                 ↩
!
                                          +-----------------------------------+
```

You cannot have Report Level `SUMMARY` with Report Type `VERTICAL`.

5 Press PF11 (`RUN`).

The report is generated. Part of the resulting report is shown below:

```
11:18:21  CHARTER-YACHT-TYPE = 'ATLANTIC 29'                        1998-02-18
ISAMPLE4                                                               1     ↩
                                                                             ↩
     CRUISE-ID     START-HARBOR      DESTINATION-HARBOR  START-DATE          ↩
     --------- -------------------- -------------------- ----------          ↩
                                                                             ↩
** Control Break (1) **                                                      ↩
     START-DATE :   19910330                                                 ↩
Old        106 KIEL                 KIEL                   19910330          ↩
Cnt         3                                                                ↩
                                                                             ↩
** Control Break (1) **                                                      ↩
     START-DATE :   19910427                                                 ↩
Old         98 KIEL                 KIEL                   19910427          ↩
Cnt         4                                                                ↩
                                                                             ↩
** Control Break (1) **                                                      ↩
     START-DATE :   19910525                                                 ↩
Old         96 KIEL                 KIEL                   19910525          ↩
Cnt         5                                                                ↩
                                                                             ↩
                                                                             ↩
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
            Print Exit              Flip        +                       Canc ↩
```

The lines *Old* display the values in the last record found before the control break.

To Create a User File to Store the Report Data

You can create a user file to contain the report data by using the Report Destination `USERFILE`.

1 Press PF2 (`EXIT`) to leave the report.

   The Worksheet appears.

2 Issue the `MODES` command.

   The Transaction Modes Reporting window appears.

3 Enter U in the `Report Destination` field as in the following example:

```
11:39                      ***** Super Natural *****                1998-02-18
SAMPLE4                          - Worksheet -                          SN3011
                                                                            ↩

Ref DB    Field Name                    +----Transaction Modes Reporting-----+
AA  1K    CRUISE-ID ..................... !                                   ↩
!
AE  1K 2  START-DATE .................... ! Data Selection .. F  Full-screen  ↩
!
AJ  1K    START-HARBOR ................. !                                   ↩
!
AK  1K    DESTINATION-HARBOR ........... ! Data Change ..... N  None         ↩
!
AP  1  2  CHARTER-YACHT-TYPE ........... !                                   ↩
!
BE        ______________________________ ! Report Type ..... L  List         ↩
!
BF        ______________________________ ! Report Level .... S  Summary      ↩
!
BG        ______________________________ !                                   ↩
!
BH        ______________________________ ! Destination ..... U  User file    ↩
!
BI        ______________________________ !                                   ↩
!
BJ        ______________________________ ! Run Mode ........ O  Online       ↩
!
BK        ______________________________ !                                   ↩
!
BL        ______________________________ ! Batch printer ... 0  (0 - 31)     ↩
!
BM        ______________________________ ! RJE available ... N  (Y/N)        ↩
!
                                          !                                   ↩
!
                                         +-----------------------------------+
```

4 Press Enter.

The Destination User File window appears with a default user file name and description as in the following example:

```
11:22                      ***** Super Natural *****                1998-02-18
SAMPLE4                          - Worksheet -                          SN3011
                                                                              ↩

Ref DB    Fi +----------------------Destination Userfile----------------------+
AA  1K    CR !                                                                ↩
!
AE  1K 2  ST ! Userfile name .. SAMPLE4______________                         ↩
!
AJ  1K    ST ! Description                                                    ↩
!
AK  1K    DE !   CREATED BY: SAMPLE4 (98-02-18 11:28)_________________________ !
AP  1  2  CH !                                                                ↩
!
BE       __ +-------------------------------------------------------------+
BF        ___________________________________ ! Report Level .... S  Summary    ↩
!
```

5 Modify user file name and description (optional).

6 Press Enter.

The Key column has been added to the worksheet. You must now mark at least one alphanumeric field of a length between 1 and 29 to make it a key field in the user file.

7 Mark the Key column next to the field `DESTINATION-HARBOR`.

The Worksheet now has the following entries:

```
18:02                      ***** Super Natural *****                1998-02-26
SAMPLE4                          - Worksheet -                          SN3011
                                                                            ↩

Ref DB    Field Name                        Seq  S/C  Key  Func Def  Info Del
AA  1K    CRUISE-ID ......................   1__  ___   __   >_   __   __   __
AE  1K 2  START-DATE ......................  4__  C1_   __   >_   __   __   __
AJ  1K    START-HARBOR ...................   2__  ___   __   __   __   __   __
AK  1K    DESTINATION-HARBOR .............   3__  ___   X_   __   __   __   __
AP  1  2  CHARTER-YACHT-TYPE .............   ___  ___   __   __   __   __   __
BE        ________________________________  ___  ___   __   __   __   __   __
BF        ________________________________  ___  ___   __   __   __   __   __
BG        ________________________________  ___  ___   __   __   __   __   __
BH        ________________________________  ___  ___   __   __   __   __   __
BI        ________________________________  ___  ___   __   __   __   __   __
BJ        ________________________________  ___  ___   __   __   __   __   __
BK        ________________________________  ___  ___   __   __   __   __   __
BL        ________________________________  ___  ___   __   __   __   __   __
BM        ________________________________  ___  ___   __   __   __   __   __
                                                                            ↩

                                                                            ↩

Fill in required definitions                                                ↩

Command ===>                                                                ↩

Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help  Next  Exit  Field Incl  Flip  -     +           Sel   Run   Canc ↩
```

8 Press PF11 (RUN).

The report is generated. A user file is created. The user file now appears in the User File List screen.

For further information on user files, see *User Files* in the *User's Guide*.

7 Sample 5: Layout Editor

- Create the Transaction SAMPLE5 76

Task: Copy and change the report SAMPLE4 as follows:
1: Change the transaction modes for reporting.
2: Add a preface.
3: Underline the field headers.
4: Add text explaining the data shown at the control break.
5: Add grand total with explanatory text.

This transaction takes the report SAMPLE4 and uses the Layout Editor to make it more understandable.

Line and field commands in the Layout Editor are shown using the period (.) as escape character. Use the escape character defined at your site. The escape character defined at your site is displayed in the delimiter information section of the Layout Editor.

Transaction Specification

Primary File	*SAG-TOURS-E-CRUISE*
Display Fields	1: `CRUISE-ID` 2: `START-HARBOR` 3: `DESTINATION-HARBOR` 4: `START-DATE`
Selection Criteria	CHARTER-YACHT-TYPE = 'ATLANTIC 29'
Control Field	`START-DATE`
Special Break Conditions	First 'n' characters: 6
System Functions	Count CRUISE-ID Grand Total Count CRUISE-ID

This section covers the following topics:

- **Create the Transaction SAMPLE5**

Create the Transaction SAMPLE5

To Access the Transaction List Screen

- Issue the `TRANSACTION` command.

  Or:

  Select `Transactions` from the Main Menu.

  Or:

  If you are within a transaction, issue the `EXIT` or `CANCEL` commands until the Transaction List screen appears.

To Copy Transaction SAMPLE4

1 Issue the `COPY TRANSACTION SAMPLE4` command.

The Copy window appears.

2 Enter SAMPLE5 in the Target Object window.

The transaction is copied to the name *SAMPLE5* and appears in the Transaction List screen.

3 Enter Layout Editor in the Description field next to SAMPLE5 (optional).

To Change Transaction Report Level and Destination

1 Enter `MO` in the command column next to SAMPLE5.

The Worksheet appears.

2 Issue the `MODES` command.

The Transaction Modes Reporting window appears.

3 Enter D in the `Report Level` field.

4 Enter S in the `Destination` field.

5 Press Enter.

The Transaction Modes Reporting window closes.

To Add Grand Total

1 Enter SF in the `Function (Func)` column next to the field `CRUISE-ID`.

The Specify System Functions window appears.

2 Enter any non-blank character in the Cnt column next to `Grand Control` field.

To Invoke NATURAL REPORT MANAGER

- Issue the `LAYOUT` command. You can abbreviate this to `LAY`.

  A default layout is generated from the transaction specification.

  The Layout Overview screen appears:

```
15:20                  *** NATURAL REPORT MANAGER ***              1998-02-26
Layout LSAMPLE5              - Layout Overview -                      NRMPAGE
                                                                            ↩

                    +-----------------------------------+                   ↩

                    I               Title               I                   ↩

                    +-----------------------------------+                   ↩

                    +-----------------------------------+                   ↩

                    I               Header              I                   ↩

                    +-----------------------------------+                   ↩

                    +-----------------------------------+                   ↩

                    I                List               I                   ↩

                    I                                   I                   ↩

                    +-----------------------------------+                   ↩

                    +-----------------------------------+                   ↩

                    I               Group               I                   ↩

                    I                                   I                   ↩

                    I                1 10               I                   ↩

                    I                                   I                   ↩

                    I                                   I                   ↩

                    +-----------------------------------+                   ↩

                                                                            ↩

Command ===>                                                                ↩

Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help  Set   Exit  Field Edit  Flip              Tech              Canc ↩
```

You are now using the product Natural Report Manager.

The Title element contains the standard title for your site. The List element contains the fields you have selected to be displayed.

To Add Preface

1 Issue the `EDIT PREFACE` command.

The Layout Editor appears. The editor area is empty.

2 Type text for a preface in the editor area as shown below:

Do not type in the first column of the editor area as this is reserved for delimiters.

```
17:16                  *** NATURAL REPORT MANAGER ***              1998-02-26
Layout LSAMPLE5               - Layout Editor -                       NRMEDIT
                                                                 More:     + >
  Transaction Fields                      Delimiter Class    Attrib.  Color  ↩

1 CRUISE-ID                      N8.0     Blank     Text     Default         ↩

2 CRUISE-TYPE                    A1       _         Text     Intens.         ↩

3 CRUISE-STATUS                  A1       (         Output   Default         ↩

. START                          *G1      )         Output   Intens.         ↩

4 START-DATE                     N8.0                                        ↩

5 START-TIME                    N6.0     Escape Char. = ,   Header Char. = &
Top   ---010---+----+----+---030- ( Preface ) ---050---+----+----+---070--- Typ
                                                                           Pre
 PREFACE                                                                   Pre
                                                                           Pre
 This transaction uses data from the file SAG-TOURS-E-CRUISE. The          Pre
 report shows cruise IDs, start harbor, destination harbor and             Pre
 starting date for cruises which use yachts of type Atlantic 29.           Pre
 The data is sorted according to cruise starting date.                     Pre
 At the end of each month, the number of cruises in that month is          Pre
 shown. The total number of cruises is shown at the end of the             Pre
                                                                             ↩

Command ===>                                                                 ↩

Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help  Set   Exit  Field Edit  Flip  -     +     Tech  <     >     Canc ↩
```

Each text constant must be preceded by a delimiter of the class `TEXT`.

The last word of the preface does not fit into the editor area shown.

3 Issue the `..I` line command in the last line of text.

A line is inserted after the last line of text (you cannot see it).

4 Press PF8 to page forwards.

5 Enter report as the last word of the preface.

6 Press PF7 to page backwards.

The report requires that the word PREFACE be highlighted.

7 If you have a delimiter for intensified text, type it before the word Preface.

The delimiter for intensified text in the example is '_'.

To Center the Text

1 Issue the `..C` line command in the same line as the word PREFACE.

The word PREFACE is centered.

2 Issue the `..C*` line command in the next line of text.

The line is centered and all the lines below are moved the same distance to the right but are not centered.

Because the Scan Right (>) function is available, you can see that the report is wider than the screen.

```
Top   ---010---+----+----+---030- ( Preface ) ---050---+----+----+---070--- Typ
                                                                           Pre
                                   _PREFACE                                Pre
                                                                           Pre
        This transaction uses data from the file SAG-TOURS-E-CRUISE. The   Pre
        report shows cruise ID's, start harbor, destination harbor and     Pre
        starting date for cruises which use yachts of type Atlantic 29.    Pre
        The data is sorted according to cruise starting date.              Pre
        At the end of each month, the number of cruises in that month is   Pre
        shown. The total number of cruises is shown at the end of the      Pre
                                                                            ↩

Command ===>                                                                ↩

Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help  Set   Exit  Field Edit  Flip  -     +     Tech  <     >     Canc ↩
```

You now need to enter two lines of blanks at the end of the Preface. Because you are at the end of the editor area, you must first create the lines.

3 Issue the `..R(2)` line command at the beginning of the last line of text.

The last line of text is copied twice.

4 Overtype the two new text lines with blanks.

To Underline Header

1 Issue the `EDIT HEADER` command.

The Header element appears in the editor area. The Header element contains the headers currently defined for the output fields.

2 Type plus signs (+) under the header fields.

To Add Text Explaining the Data at Control Breaks

1 Issue the `EDIT GROUP1` command.

The Group1 element appears in the editor area as follows:

```
All   ---010---+----+----+---030-- ( Group1 ) ---050---+----+----+---070--- Typ
 ** Control Break (1) **                                                   G1_
      START-DATE : )S00000000                                              G1_
 Cnt )S0000000                                                             G1_
                                                                           G1_
                                                                           ___
                                                                           ___
                                                                           ___
                                                                           ___
                                                                           ___
You are on the first page.                                                  ↩

Command ===>                                                                ↩

Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help  Set   Exit  Field Edit  Flip  -     +     Tech  <     >     Canc ↩
```

The Group1 element contains the information displayed at the (first) control break.

2 Overtype the line which contains the text ** Control Break (1) **with blanks.

3 Type the `.M` field command in the field)S00000000 next to the text `START-DATE`.

4 Position the cursor in the same line in column 050 (under 050 in the scale).

5 Press Enter.

The field is moved so it starts under the 050 in the scale.

6 Type the `.M` field command in the field `)S00000000` next to the text `Cnt`.

7 Position the cursor in the same line in column 050 (under 050 in the scale).

8 Press Enter.

The field is moved so it starts under the 050 in the scale.

9 Type the `.D` field command in the field `START-DATE`.

The field is deleted.

10 Overtype the colon (:) with a blank.

11 Type the text Last Starting Date: next to the first field `)S00000000` starting the text at column 019.

12 Type the `.D` field command in the field `Cnt`.

The field is deleted.

13 Type the text Number of Cruises this Month: next to the second field)S00000000 starting the text at column 019.

The editor area now has the following contents:

```
 All   ---010---+----+----+---030-- ( Group1 ) ---050---+----+----+---070--- Typ
                                                                            G1_
                    Last starting date:           )S00000000                G1_
                     Number of Cruises this Month: )S0000000                  ↩
G1                                                                            ↩
   ___
                                                                            ___
                                                                            ___
                                                                            ___
                                                                            ___
                                                                            ___
                                                                              ↩

 Command ===>                                                                 ↩

 Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
       Help  Set   Exit  Field Edit  Flip  -     +     Tech  <     >     Canc ↩
```

To Add Text Explaining the Data at the Grand Total

1 Issue the `EDIT GROUP10` command.

The Group10 element appears in the editor area as follows:

```
All   ---010---+----+----+---030- ( Group10 ) ---050---+----+----+---070--- Typ
 ** Grand Totals **                                                        G10
 Cnt )S0000000                                                             G10
                                                                           G10
                                                                           ___
                                                                           ___
                                                                           ___
                                                                           ___
                                                                           ___
                                                                           ___
You are on the first page.                                                  ↩

Command ===>                                                                ↩

Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help  Set   Exit  Field Edit  Flip  -     +     Tech  <     >     Canc ↩
```

The Group10 element contains the information displayed at the Grand Total.

2 Issue the `..D` line command in the line which contains ** Grand Totals ** .

The line is deleted.

3 Type the `.M` field command in the field)S00000000 next to the text `Cnt`.

4 Position the cursor in the same line at column 050.

5 Press Enter.

The field is moved.

6 Enter the `.D` field command in the field `Cnt`.

The field is deleted.

7 Enter the text Total Number of Cruises: next to the field)S00000000 starting the text at column 019 (overtype the equals (=) sign).

```
All   ---010---+----+----+---030- ( Group10 ) ---050---+----+----+---070--- Typ
                  Total Number of Cruises:      )S0000000                 G10
                                                                          G10
                                                                          G10
                                                                          ___
                                                                          ___
                                                                          ___
                                                                          ___
                                                                          ___
                                                                          ___
                                                                            ↩

Command ===>                                                                ↩

Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help  Set   Exit  Field Edit  Flip  -     +     Tech  <     >     Canc ↩
```

To Test the Layout

1 Issue the `TEST` command.

The whole layout appears as it would if the transaction were run except for that the output fields and the standard title are filled with dummy data.

```
17:44:05  SSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS 98-02-26
LSAMPLE5  SSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS 1    ↩

          SSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS      ↩

                                                                              ↩

                                    PREFACE                                   ↩

                                                                              ↩

       This transaction uses data from the file SAG-TOURS-E-CRUISE. The       ↩

       report shows cruise ID's, start harbor, destination harbor and         ↩

       starting date for cruises which use yachts of type Atlantic 29.        ↩

       The data is sorted according to cruise starting date.                  ↩

       At the end of each month, the number of cruises in that month is       ↩

       shown. The total number of cruises is shown at the end of the          ↩

       report.                                                                ↩

                                                                              ↩

                                                                              ↩

     CRUISE-ID     START-HARBOR      DESTINATION-HARBOR  START-DATE           ↩

     +++++++++     ++++++++++++      ++++++++++++++++++  ++++++++++           ↩

                                                                              ↩

             9 AbcDefGhijAbcDefGhij AbcDefGhijAbcDefGhij         9            ↩

             9 AbcDefGhijAbcDefGhij AbcDefGhijAbcDefGhij         9            ↩

                                                                              ↩

                                                                              ↩

Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
            Print Exit              Flip                                Canc ↩
```

2 Page through the layout to make sure that it is what you want.

To Look at Layout Overview Screen and Worksheet (Optional)

1 Press PF2.

The Layout Overview screen appears:

```
11:35                  *** NATURAL REPORT MANAGER ***              1998-03-01
Layout LSAMPLE5               - Layout Overview -                     NRMPAGE
                                                                            ↩

        +-----------------------------------------------------------+       ↩

         I                           Title                           I       ↩

        +-----------------------------------------------------------+       ↩

        +-----------------------+  +--------------------------------+       ↩

         I        Preface        I  I             Header             I       ↩

         I                       I  +--------------------------------+       ↩

         I                       I  +--------------------------------+       ↩

         I                       I  I              List              I       ↩

         I                       I  I                                I       ↩

         I                       I  +--------------------------------+       ↩

         I                       I  +--------------------------------+       ↩

         I                       I  I             Group              I       ↩

         I                       I  I                                I       ↩

         I                       I  I              1 10              I       ↩

         I                       I  I                                I       ↩

         I                       I  I                                I       ↩

        +-----------------------+  +--------------------------------+       ↩

                                                                            ↩

Command ===>                                                                ↩

Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help  Set   Exit  Field Edit  Flip              Tech              Canc ↩
```

The preface element you have created is now shown.

2 Press PF8.

The Worksheet appears:

```
11:36                      ***** Super Natural *****                1998-03-01
SAMPLE5                          - Worksheet -                          SN3011
                                                                            ↩

Ref DB    Field Name                        Seq   S/C  Func Def  Info Del   ↩

AA  1K    CRUISE-ID ......................   L__   ___   >_   __   __   __   ↩

AE  1K 2  START-DATE ....................   L__   C1_   >_   __   __   __   ↩

AJ  1K    START-HARBOR ...................   L__   ___   __   __   __   __   ↩

AK  1K    DESTINATION-HARBOR .............   L__   ___   __   __   __   __   ↩

AP  1  2  CHARTER-YACHT-TYPE .............   ___   ___   __   __   __   __   ↩

BI   V    *TIMX ..........................   L__   ___   __   __   __   __   ↩

BJ   V    *DATX ..........................   L__   ___   __   __   __   __   ↩

BK   V    *PROGRAM .......................   L__   ___   __   __   __   __   ↩

BL   V    *PAGE-NUMBER ...................   L__   ___   __   __   __   __   ↩

BM        ________________________________   ___   ___   __   __   __   __   ↩

BN        ________________________________   ___   ___   __   __   __   __   ↩

BO        ________________________________   ___   ___   __   __   __   __   ↩

BP        ________________________________   ___   ___   __   __   __   __   ↩

BQ        ________________________________   ___   ___   __   __   __   __   ↩

                                                                            ↩

                                                                            ↩

Layout has been successfully modified                                       ↩

Command ===>                                                                ↩

Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help  Next  Exit  Field Incl  Flip  -     +          Sel   Run   Canc ↩
```

There is an L in the Sequence (Seq) column next to fields used in layout elements. You cannot use the `Sequence (Seq)` column for these fields until you have deleted them from the layout element.

The system variables which are part of the standard title (`*TIMX`, `*DATX`, `*PROGRAM` and `*PAGE-NUMBER`) appear in the Field Name column and are marked with `V` in the Database Reference (DB) column.

To Run the Transaction

- Issue the `RUN` command. In Natural Report Manager, the `RUN` command is not assigned to PF11.

  The report is generated. Some screens from the report are shown below:

```
17:50:22  CHARTER-YACHT-TYPE = 'ATLANTIC 29'                        1998-02-26
ISAMPLE5                                                                  1     ↩
                                                                                ↩
                                                                                ↩
                                    PREFACE                                     ↩
                                                                                ↩
       This transaction uses data from the file SAG-TOURS-E-CRUISE. The         ↩
       report shows cruise ID's, start harbor, destination harbor and           ↩
       starting date for cruises which use yachts of type Atlantic 29.          ↩
       The data is sorted according to cruise starting date.                    ↩
       At the end of each month, the number of cruises in that month is         ↩
       shown. The total number of cruises is shown at the end of the            ↩
       report.                                                                  ↩
                                                                                ↩
                                                                                ↩
                                                                                ↩
                                                                                ↩
                                                                                ↩
                                                                                ↩
                                                                                ↩
                                                                                ↩
                                                                                ↩
                                                                                ↩
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
            Print Exit              Flip        +                       Canc ↩
```

```
14:28:26  CHARTER-YACHT-TYPE = 'ATLANTIC 29'                        1998-03-01
ISAMPLE5                                                               2     ↩
                                                                             ↩
     CRUISE-ID     START-HARBOR      DESTINATION-HARBOR  START-DATE          ↩
     +++++++++     ++++++++++++      ++++++++++++++++++  ++++++++++          ↩
                                                                             ↩
            79 KIEL                 KIEL                   19910330          ↩
            92 KIEL                 KIEL                   19910330          ↩
           106 KIEL                 KIEL                   19910330          ↩
                                                                             ↩
                  Last starting date:                    19910330            ↩
                  Number of Cruises this Month:          3                   ↩
                                                                             ↩
                                                                             ↩
                                                                             ↩
                                                                             ↩
                                                                             ↩
                                                                             ↩
                                                                             ↩
            80 KIEL                 KIEL                   19910406          ↩
           107 KIEL                 KIEL                   19910413          ↩
                                                                             ↩
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
            Print Exit              Flip        +                       Canc ↩
```

```
17:51:14  CHARTER-YACHT-TYPE = 'ATLANTIC 29'                        1998-02-26
ISAMPLE5                                                               9     ↩

                                                                             ↩

     CRUISE-ID     START-HARBOR      DESTINATION-HARBOR  START-DATE
     +++++++++     +++++++++++++     ++++++++++++++++++  ++++++++++

                  Last starting date:                   19911026




                                                                             ↩

                  Number of Cruises this Month:         4                    ↩


                  Total Number of Cruises:             41




Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
            Print Exit              Flip        +                       Canc ↩
↩
```

8 Sample 6: File Link

- Create the Transaction SAMPLE6 96

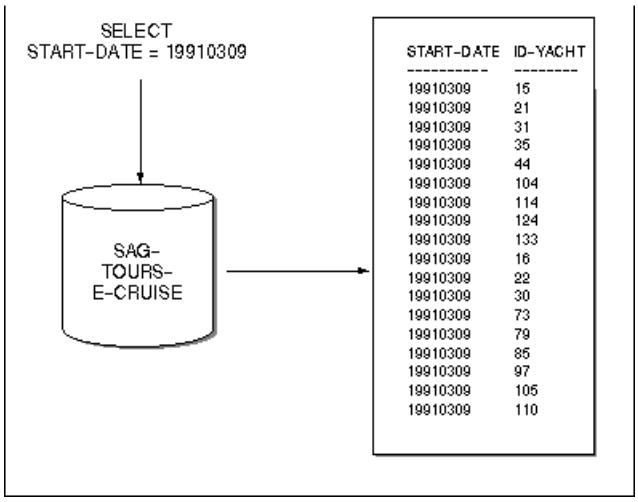
Task: Find both the name and type of the yacht in which a customer sailed on a cruise starting on March 9 1991. the customer is very tall and remembers that the yacht had head room of more than 1m95cm.

Information about cruise starting dates is stored in the file*SAG-TOURS-E-CRUISE*. Yacht names and technical specifications are stored in the file *SAG-TOURS-E-YACHT*. Because you need information from two files, you must link them using the `INCLUDE` command.

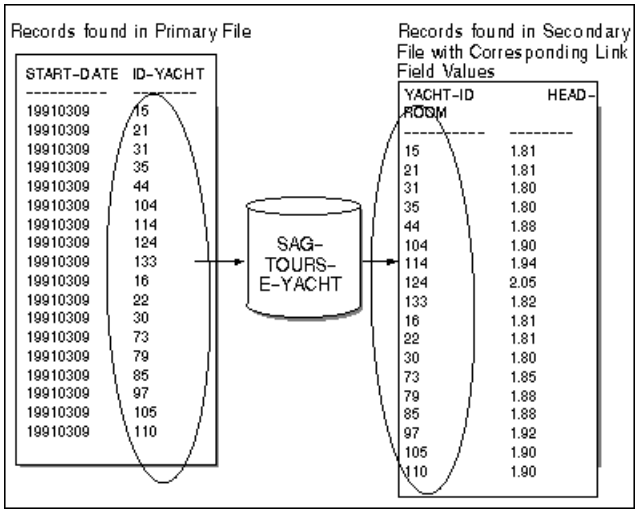
For further information on linking files, see *INCLUDE command* and *What is File Linking?* in Files in the *User's Guide*.

Super Natural searches the primary and secondary files as follows when the transaction is run:

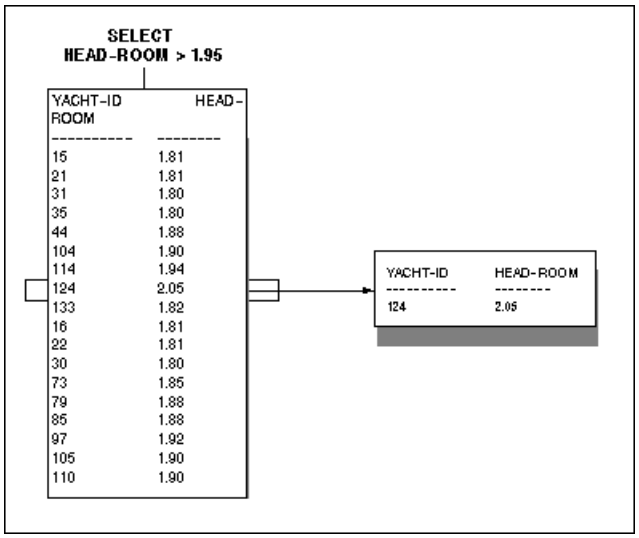
1. A search is made in the *SAG-TOURS-E-CRUISE* file for all records which meet the selection criterion START-DATE = 19910309. The following records are found:



1. When a record is found in the primary file, Super Natural takes the value of its link field (`ID-YACHT`) and searches the secondary file for records whose link field (`YACHT-ID`) has the same value. The following records are found:



1. The selection criterion HEAD-ROOM > 1.95 is applied to the records found in the secondary file. The following record is found.



Transaction Specification

Primary File	*SAG-TOURS-E-CRUISE*
Link field in primary file	`ID-YACHT`
Secondary File	*SAG-TOURS-E-YACHT*
Link field in secondary file	`YACHT-ID`
Selection Criteria	START-DATE = 19910309 AND HEAD-ROOM > 1.95
Display fields	1: `YACHT-NAME` 2: `YACHT TYPE` 3: `START-DATE` 4: `HEAD-ROOM`

This section covers the following topics:

- **Create the Transaction SAMPLE6**

Create the Transaction SAMPLE6

To Add a Transaction

1 Issue the `ADD TRANSACTION SAMPLE6` command.

The Add Transaction window appears.

2 Type File Link in the `Description` field (optional).

To Choose a Primary File

The report requires data from the primary file *SAG-TOURS-E-CRUISE*.

1 Type *SAG-TOURS-E-CRUISE* in the `File Name` field.

2 Press Enter.

The Worksheet appears.

To Choose Secondary File

1 Issue the `INCLUDE` command.

The Include Files window appears.

2 Enter *SAG-TOURS-E-YACHT* in the `Secondary File` field. You can also use the `Asterisk (*) List` function.

```
17:31                      ***** Super Natural *****                1998-05-13
SAMPLE6                          - Worksheet -                          SN3011
                                                                            ↩

Ref DB    Field Name    +--------------------Include Files--------------------+
BE         _____________ !                                                    ↩
!
BF        _____________ ! Primary File ..... SAG-TOURS-E-CRUISE_____________ !
BG        _____________ ! Secondary File ... sag-tours-e-yacht_______________ !
BH         _____________ !                                                    ↩
!
BI        _____________ ! Add Lookup File .. ________________________________ !
BJ         _____________ ! Process Lookups .. _                               ↩
!
BK         _____________ !                                                    ↩
!
BL        _____________ +-----------------------------------------------------+
BM         ________________________________   ___   ___   __   __   __   __   ↩

BN         ________________________________   ___   ___   __   __   __   __   ↩

BO         ________________________________   ___   ___   __   __   __   __   ↩

BP         ________________________________   ___   ___   __   __   __   __   ↩

BQ         ________________________________   ___   ___   __   __   __   __   ↩

BR         ________________________________   ___   ___   __   __   __   __   ↩

                                                                            ↩

                                                                            ↩

Fill in required definitions                                                ↩

Command ===>                                                                ↩

Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help        Exit              Flip                                Canc ↩
```

The Define File Link window appears.

3 Type `ID-YACHT` in the `Link Field in Primary File` field.

4 Type `YACHT-ID` in the `Link Field in Secondary File` field.

```
17:31                      ***** Super Natural *****                1998-05-13
SAMPLE6                          - Worksheet -                          SN3011
                                                                            ↩

Ref DB    Field Name    +--------------- +----------Define File Link----------+
BE         _____________ !                !                                    ↩
!
BF         _____________ ! Primary File . ! Primary File                       ↩
!
BG         _____________ ! Secondary File !   SAG-TOURS-E-CRUISE               ↩
!
BH         _____________ !                ! Link field in primary file        ↩
!
BI        _____________ ! Add Lookup Fil !   id-yacht_________________________ !
BJ         _____________ ! Process Lookup ! From position .. ...               ↩
!
BK         _____________ !                !   to position .. ...               ↩
!
BL         _____________ +--------------- !                                    ↩
!
BM         ______________________________ ! Secondary File                     ↩
!
BN         ______________________________ !   SAG-TOURS-E-YACHT               ↩
!
BO         ______________________________ ! Link field in secondary file      ↩
!
BP        ______________________________ !   yacht-id_________________________ !
BQ         ______________________________ !                                    ↩
!
BR        ______________________________ +-----------------------------------+
```

The fields `ID-YACHT` and `YACHT-ID` are used as link fields because they both have the format `N8` and contain comparable data. You can also use the `Asterisk (*) List` function to review the field list for each file.

5 Press Enter.

The Define File Link window closes.

6 Press Enter.

The Include Files window closes.

To Choose Fields

The report requires data stored in the fields `YACHT-NAME`, `YACHT-TYPE`, `START-DATE` and `HEAD-ROOM`.

- Choose the fields as described in Step 3 of *Sample 1*.

To Determine Display Sequence for Horizontal Output

1 Type 1 in the Sequence column next to the field `YACHT-NAME`.

2 Type 2 in the Sequence column next to the field `YACHT-TYPE`.

3 Type 3 in the Sequence column next to the field `START-DATE`.

4 Type 4 in the Sequence column next to the field `HEAD-ROOM`.

The Worksheet now looks like this:

```
17:36                      ***** Super Natural *****                1998-05-13
SAMPLE6                          - Worksheet -                          SN3011
                                                                            ↩

Ref DB    Field Name                        Seq   S/C  Func Def  Info Del   ↩

AE  1K 2  START-DATE ....................   3__   ___   __   __   __   __   ↩

AL  1K    ID-YACHT ......................   ___   ___   __   __   __   __   ↩

BE  2K    YACHT-ID ......................   ___   ___   __   __   __   __   ↩

BF  2K    YACHT-NAME ....................   1__   ___   __   __   __   __   ↩

BK  2K    YACHT-TYPE ....................   2__   ___   __   __   __   __   ↩

BQ  2     HEAD-ROOM .....................   4__   ___   __   __   __   __   ↩

BS        ________________________________  ___   ___   __   __   __   __   ↩

BT        ________________________________  ___   ___   __   __   __   __   ↩

BU        ________________________________  ___   ___   __   __   __   __   ↩

BV        ________________________________  ___   ___   __   __   __   __   ↩

BW        ________________________________  ___   ___   __   __   __   __   ↩

BX        ________________________________  ___   ___   __   __   __   __   ↩

BY        ________________________________  ___   ___   __   __   __   __   ↩

BZ        ________________________________  ___   ___   __   __   __   __   ↩

                                                                            ↩

                                                                            ↩

Fill in required definitions                                                ↩

Command ===>                                                                ↩

Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help  Next  Exit  Field Incl  Flip  -     +           Sel   Run   Canc ↩
```

The 2s in the DB column indicate that the fields they are next to are in the secondary file.

To Define Selection Criteria

1 Issue the `SELECTION` command. You can also abbreviate this command to `SEL`.

The Selection Editor appears.

The report requires information on a cruise which started on 9 March 1991 and used a yacht which had more head room than 1.95m.

2 Enter START-DATE = 19910309 AND HEAD-ROOM > 1.95 in the editor area.

```
17:37                      ***** Super Natural *****                1998-05-13
SAMPLE6                       - Selection Editor -                     SNZUL-S
                                                                            ↩

                                                                            ↩

      1  < START-DATE = 19910309 AND HEAD-ROOM > 1.95                  >    1
      2  <                                                             >    2
      3  <                                                             >    3
      4  <                                                             >    4
      5  <                                                             >    5
      6  <                                                             >    6
      7  <                                                             >    7
      8  <                                                             >    8
      9  <                                                             >    9
     10  <                                                             >   10
     11  <                                                             >   11
     12  <                                                             >   12
     13  <                                                             >   13
     14  <                                                             >   14
     15  <                                                             >   15
                                                                            ↩

SELECTION lines are correct                                                 ↩

Command ===>                                                                ↩

Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help  Next  Exit  Field Check Flip  -     +           Cont  Run   Canc ↩
```

To Run the Transaction

1 Issue the `RUN` command.

Because the headers of the fields you have chosen for display are too wide to fit on the standard page, the Report Line Length window appears.

2 Mark the option Change to Report Type Vertical.

```
17:37                      ***** Super Natural *****                1998-05-13
SAMPLE6                       - Selection Editor -                     SNZUL-S
                                                                             ↩

                         +----------------Report Line Length-----------------+
      1  < START-DATE = 1 !                                                   ↩
!
      2  <               ! The selected fields required a line size of .. 79 !
      3  <               ! The field headers required a line size of .... 82 !
      4  <               ! The available Online  line size at present ... 79 !
      5  <                !                                                   ↩
!
      6  <                !   -  Enlarge Available Line Size                  ↩
!
      7  <                !   x  Change to Report Type Vertical List          ↩
!
      8  <                !   _  Truncate Headers                             ↩
!
      9  <                !   _  Remove Excess Fields                         ↩
!
     10  <                !   _  Remove Excess Fields and Truncate Headers    ↩
!
     11  <                !   _  Modify Transaction                           ↩
!
     12  <                !                                                   ↩
!
     13  <               +-----------------------------------------------------+
```

3 Press Enter.

The report is generated. Part of the resulting report is shown below:

```
17:44:38  START-DATE = 19910309 AND HEAD-ROOM > 1.95                1998-05-13
ISAMPL6                                                                   1     ↩
                                                                                ↩
YACHT-NAME ..................... CASABLANCA                                   ↩
YACHT-TYPE ..................... PACIFIC 52                                   ↩
START-DATE ..................... 19910309                                     ↩
HEAD-ROOM ...................... 2.05                                         ↩
                                                                                ↩
                                                                                ↩
                                                                                ↩
                                                                                ↩
                                                                                ↩
                                                                                ↩
                                                                                ↩
                                                                                ↩
                                                                                ↩
                                                                                ↩
                                                                                ↩
                                                                                ↩
                                                                                ↩
                                                                                ↩
                                                                                ↩
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
            Print Exit              Flip        +     Posi  <     >     Canc ↩
```

9 Sample 7: File Lookup

- Create the Transaction SAMPL7 107

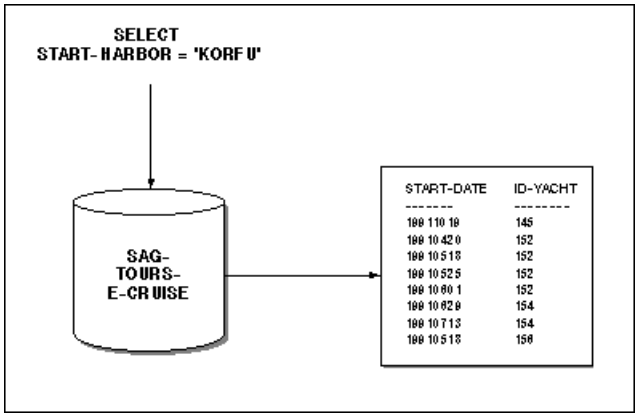
Task: List cruises starting in Korfu with their destination and starting date in order of starting date. List the type, name and length of the yachts which sail on these cruises.

Information on cruise starting harbor, starting date and cruise destination is stored in the file *SAG-TOURS-E-CRUISE*. Information on yacht length, type and name is stored in the file *SAG-TOURS-E-YACHT*. As each cruise can only have one value for destination, yacht length, name and type, you can take *SAG-TOURS-E-CRUISE* as the primary file and perform a lookup on the file *SAG-TOURS-E-YACHT* using the `INCLUDE` command.

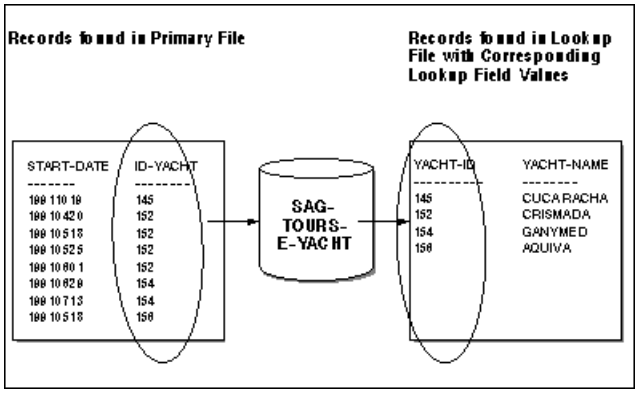
For further information on file lookup, see *INCLUDE command* and *What is File Lookup?* in Defining Files in the *User's Guide*.

Super Natural searches the primary file and lookup file as follows when the transaction is run:

1. A search is made in the *SAG-TOURS-E-CRUISE* file for all records which meet the selection criterion START-HARBOR = 'KORFU'. The following records are found:



1. For each record found in the primary file, Super Natural searches the lookup file (*SAG-TOURS-E-CRUISE*) for the *first* record where the value of the lookup field (`ID-YACHT`) is the same as that of the link field in the primary file record. The following records are found:



1. The records found in the primary file are returned and the desired information from the corresponding records in the lookup file is displayed.

Transaction Specification

Primary File	*SAG-TOURS-E-CRUISE*
Lookup Field In Primary File	`ID-YACHT`
Lookup File	*SAG-TOURS-E-YACHT*
Lookup Field In Lookup File	`YACHT-ID`
Selection Criteria	START-HARBOR = 'KORFU'
Display Fields	1: `START-DATE` 2: `START-HARBOR` 3: `DESTINATION-HARBOR` 4: YACHT-TYPE 5: `YACHT-NAME` 6: `LENGTH`
Sort Field	`START-DATE`

This section covers the following topics:

- **Create the Transaction SAMPL7**

Create the Transaction SAMPL7

To Add a Transaction

1 Issue the `ADD TRANSACTION SAMPLE7` command.

The Add Transaction window appears.

2 Type File Lookup in the `Description` field (optional).

To Choose a Primary File

The report requires data from the primary file *SAG-TOURS-E-CRUISE*.

1 Type *SAG-TOURS-E-CRUISE* in the `File Name` field.

2 Press Enter.

The Worksheet appears.

To Choose Fields from Primary File

The report requires data stored in the primary file fields `START-DATE`, `START-HARBOR` and `DESTINATION-HARBOR`.

- Choose the fields as described in Step 3 of *Sample 1*.

To Choose Lookup File

1 Issue the `INCLUDE` command.

The Include Files window appears.

2 Enter *SAG-TOURS-E-YACHT* in the `Add File Lookup` field. You can also use the `Asterisk (*) List` function.

```
12:36                      ***** Super Natural *****                1998-05-24
SAMPLE7                          - Worksheet -                          SN3011
                                                                            ↩

Ref DB    Field Name    +--------------------Include Files--------------------+
AE  1K 2  START-DATE .. !                                                   ↩
!
AJ  1K    START-HARBOR  ! Primary File ..... SAG-TOURS-E-CRUISE_____________ !
AK  1K    DESTINATION-H ! Secondary File ... ________________________________ !
BE         _____________ !                                                  ↩
!
BF        _____________ ! Add Lookup File .. sag-tours-e-yacht_____________ !
BG         _____________ ! Process Lookups .. _                             ↩
!
BH         _____________ !                                                  ↩
!
BI        _____________ +-----------------------------------------------------+
```

The Define File Lookup window appears.

3 Type `ID-YACHT` in the `Lookup Link Field` field.

4 Type `YACHT-ID` in the `Lookup Field in Lookup File` field.

```
12:36                      ***** Super Natural *****                1998-05-24
SAMPLE7                          - Worksheet -                          SN3011
                                                                            ↩

Ref DB    Field Name    +- +----------------Define File Lookup----------------+
AE  1K 2  START-DATE .. !  !                                                ↩
!
AJ  1K    START-HARBOR  !  ! Lookup link field                              ↩
!
AK  1K    DESTINATION-H !  !   id-yacht_________________________            ↩
!
BE        _____________ !  ! Lookup File                                    ↩
!
BF        _____________ !  !   SAG-TOURS-E-YACHT                            ↩
!
BG        _____________ !  ! Lookup field in lookup file                    ↩
!
BH        _____________ !  !   yacht-id__________________________            ↩
!
BI        _____________ +- !                                                ↩
!
BJ        _________________ ! Lookup (1:1) ...................... Y   (Y/N)   ↩
!
BK        _________________ !   or enter N for lookup (1:n)                 ↩
!
BL        _________________ ! Process even if no records found .. Y   (Y/N)   ↩
!
BM       __________________ ! Search position ..................   3 (3 - 99) !
BN        _________________ !                                               ↩
!
BO        _________________ ! Select lookup display fields ...... X          ↩
!
                            !                                               ↩
!
                          +-------------------------------------------------+
```

The fields `ID-YACHT` and `YACHT-ID` are used as lookup fields because they both have the format `N8` and contain the same data. You can also use the `Asterisk (*) List` function to review the field list for each file.

5 Press Enter.

Because the `Select Lookup Display Fields` field is marked by default, the Field Selection List window for the lookup file appears.

To Choose Fields from Lookup File

The report requires data stored in the lookup file fields `YACHT-TYPE`, `YACHT-NAME` and `LENGTH`.

1 Mark the fields in the Field Selection List window.

```
12:36                      ***** Super Natural *****                1998-05-24
SAMPLE7                          - Worksheet -                          SN3011
                                                                            ↩

Ref DB    Field Name     +----------------Field Selection List----------------+
AE  1K 2  START-DATE ..  !     Field Name                        Format  Info !
AJ  1K    START-HARBOR   !  x  YACHT-NAME                         A30      _  ↩
!
AK  1K    DESTINATION-H  !  _  YACHT-BRANCH                       A1       _  ↩
!
BE        _______________ !  _  ID-CH-BASE                        A8       _  ↩
!
BF        _______________ !  _  ID-S-OWNER                        N8       _  ↩
!
BG        _______________ !  _  DID-DESCRIPTION                   A8       _  ↩
!
BH        _______________ !  x  YACHT-TYPE                        A30      -  ↩
!
BI        _______________ !  x  LENGTH                            P3.2     _  ↩
!
BJ        _______________ !  _  WIDTH                             P3.2     _  ↩
!
BK        _______________ !  _  DRAFT                             P3.2     _  ↩
!
BL        _______________ !  _  SAIL-SURFACE                      P3       _  ↩
!
BM        _______________ !  _  MOTOR                             P3       _  ↩
!
BN        _______________ !  _  HEAD-ROOM                         P3.2     _  ↩
!
BO        _______________ !  _  BUNKS                             P3       _  ↩
!
                          !                                                  ↩
!
                        +-----------------------------------------------------+
```

2 Press Enter.

The Field Selection List window closes.

3 Press Enter.

The Define File Lookup window closes. The Include Files window now has a 1 next to the `Process Lookups` field to show that you have defined one lookup for the current transaction.

4 Press Enter.

5 The Worksheet reappears.

To Determine Display Sequence for Horizontal Output

1 Type 1 in the Sequence column next to the field `START-DATE`.
2 Type 2 in the Sequence column next to the field `START-HARBOR`.
3 Type 3 in the Sequence column next to the field `DESTINATION-HARBOR`.
4 Type 4 in the Sequence column next to the field `YACHT-TYPE`.
5 Type 5 in the Sequence column next to the field `YACHT-NAME`.
6 Type 6 in the Sequence column next to the field `LENGTH`.

To Define Sort Criteria

The report requires that you sort the list according to cruise starting date.

1 Type S1 in the `Sort/Control (S/C)` column next to the field `START-DATE`.
2 Press Enter.

The Worksheet now has the following entries:

```
13:22                      ***** Super Natural *****                1998-05-24
SAMPLE7                          - Worksheet -                          SN3011
                                                                            ↩

Ref DB    Field Name                        Seq   S/C  Func Def  Info Del   ↩

AE  1K 2  START-DATE ....................   1__   S1_   __   __   __   __   ↩

AJ  1K    START-HARBOR ..................   2__   ___   __   __   __   __   ↩

AK  1K    DESTINATION-HARBOR ............   3__   ___   __   __   __   __   ↩

AL  1K    ID-YACHT ......................   ___   ___   __   __   __   __   ↩

BE  LK 3  YACHT-ID ......................   ___   ___   __   __   __   __   ↩

BF  L  3  YACHT-NAME ....................   5__   ___   __   __   __   __   ↩

BG  L  3  YACHT-TYPE ....................   4__   ___   __   __   __   __   ↩

BH  L  3  LENGTH ........................   6__   ___   __   __   __   __   ↩

BI        ________________________________   ___   ___   __   __   __   __   ↩

BJ        ________________________________   ___   ___   __   __   __   __   ↩

BK        ________________________________   ___   ___   __   __   __   __   ↩

BL        ________________________________   ___   ___   __   __   __   __   ↩

BM        ________________________________   ___   ___   __   __   __   __   ↩

BN        ________________________________   ___   ___   __   __   __   __   ↩

                                                                            ↩

                                                                            ↩

Fill in required definitions                                                ↩

Command ===>                                                                ↩

Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help  Next  Exit  Field Incl  Flip  -     +           Sel   Run   Canc ↩
```

The 'L's in the Database (DB) column indicate that the fields next to them are in the lookup file.

Note that the Sequence (Seq), Sort/Control (S/C), Function (Func) and `Delete (Del)` columns are protected for the field `YACHT-ID` which is the lookup field in the lookup file.

To Define Selection Criteria

1 Issue the `SELECTION` command. You can also abbreviate this command to `SEL`.

The Selection Editor appears.

The report requires information on cruises which start in Korfu.

2 Enter START-HARBOR = 'KORFU' in the editor area.

```
13:23                      ***** Super Natural *****                1998-05-24
SAMPLE7                       - Selection Editor -                     SNZUL-S
                                                                             ↩
                                                                             ↩
     1  < START-HARBOR = 'KORFU'                                     >    1
     2  <                                                             >    2
     3  <                                                             >    3
```

Note: You cannot define selection criteria for fields contained in the lookup file.

To Run the Transaction

1 Issue the `RUN` command.

Because the fields and the field headers you have chosen for display are too wide to fit on the standard page, the Report Line Length window appears.

2 Mark the option Enlarge Available Line Size.

```
13:23                     ***** Super Natural *****                1998-05-24
SAMPLE7                      - Selection Editor -                     SNZUL-S
                                                                            ↩

                        +-----------------Report Line Length-----------------+
      1  < START-HARBOR  !                                                   ↩
!
      2  <               ! The selected fields required a line size of .. 121 !
      3  <               ! The field headers required a line size of .... 122 !
      4  <               ! The available Online  line size at present ... 79 ↩
!
      5  <               !                                                   ↩
!
      6  <               !   x  Enlarge Available Line Size                  ↩
!
      7  <               !   _  Change to Report Type Vertical List          ↩
!
      8  <               !   _  Truncate Headers                             ↩
!
      9  <               !   _  Remove Excess Fields                         ↩
!
     10  <               !   _  Remove Excess Fields and Truncate Headers    ↩
!
     11  <               !   _  Modify Transaction                           ↩
!
     12  <               !                                                   ↩
!
     13  <              +---------------------------------------------------+
```

3 Press Enter.

The report is generated. Part of the resulting report is shown below:

```
13:24:51  START-HARBOR = 'KORFU'                                    1998-05-24
ISAMPLE7                                                                  1     ↩
                                                                                ↩
START-DATE     START-HARBOR      DESTINATION-HARBOR           YACHT-TYPE      ↩
---------- -------------------- -------------------- --------------------------
                                                                                ↩
  19910420 KORFU                KEFALONIA            MIKADO 56                ↩
  19910518 KORFU                KORFU                MIKADO 56                ↩
  19910518 KORFU               REGGIO DI CALABRIA   15-M-STEILGAFFELSCHONER ↩
  19910525 KORFU                KORFU                MIKADO 56                ↩
  19910601 KORFU                KEFALONIA            MIKADO 56                ↩
  19910629 KORFU                KORFU                FIRST 38 S               ↩
  19910713 KORFU                ZAKYNTHOS            FIRST 38 S               ↩
  19911019 KORFU                KALAMATA             SKORPION III             ↩
                                                                                ↩
                                                                                ↩
                                                                                ↩
                                                                                ↩
                                                                                ↩
                                                                                ↩
                                                                                ↩
                                                                                ↩
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
            Print Exit             Flip       +     Posi  <     >     Canc ↩
```

4 Use PF11 and PF10 to shift to the left and right in the report.

5 Use PF9 to position the field at cursor position to the left-hand side of the screen.

10 Sample 8: Dynamic Input Fields

- Create the Transaction SAMPLE8 118

Task: Find the start date, end date and number of bunks of cruises whose start harbor begins with D or E and for cruises whose start harbor begins with U, V or W.

This transaction uses dynamic input fields to enable you to view different ranges of data each time you run it. The transaction uses the Layout Editor to show the range you are currently viewing in the title of the report.

Transaction Specification

Primary File	*SAG-TOURS-E-CRUISE*
Display Fields	1: `START-HARBOR` 2: `START-DATE` 3: `END-DATE` 4: `BUNK-NUMBER`
Dynamic Input Fields	`HARBOR1` `HARBOR2`
Selection Criteria	START-HARBOR = HARBOR1 THRU HARBOR2

This section covers the following topics:

- **Create the Transaction SAMPLE8**

Create the Transaction SAMPLE8

To Add a Transaction

1 Issue the `ADD TRANSACTION SAMPLE8` command.

The Add Transaction window appears with the transaction name already entered in the `Transaction ID` field.

2 Type the description Dynamic Input Fields in the `Description` field (optional).

To Choose File

The report requires data from the file *SAG-TOURS-E-CRUISE*.

1 Type the file name *SAG-TOURS-E-CRUISE* in the `File Name` field. You can alternatively use the `Asterisk (*) List` function.

2 Press Enter.

The Worksheet appears.

To Choose Fields

The report requires data stored in the fields START-HARBOR, START-DATE, END-DATE and BUNK-NUMBER.

1 Enter an asterisk (*) in the first position of the Field Name column.

The Field Selection List window appears.

2 Mark the fields START-HARBOR, START-DATE, END-DATE and BUNK-NUMBER.

You must use PF2 to page forward to BUNK-NUMBER.

```
16:10                      ***** Super Natural *****                1998-03-15
SAMPLE8                          - Worksheet -                          SN3011
                                                                            ↩

Ref DB    Field Name    +----------------Field Selection List----------------+
BE        *_____________ !     Field Name                        Format  Info !
BF        _____________ !  _  ID-SUCCESSOR                      N8      __  ↩
!
BG        _____________ !  _  CHARTER-CRUISE                    *G1     __  ↩
!
BH        _____________ !  _  CHARTER-YACHT-TYPE                A30     __  ↩
!
BI        _____________ !  _  ID-CHARTER-BASE                   A8      __  ↩
!
BJ        _____________ !  _  SAILING-CRUISE                    *G1     __  ↩
!
BK        _____________ !  _  ID-SKIPPER                        N8      __  ↩
!
BL        _____________ !  _  CRUISE-PRICE                      P10.3   __  ↩
!
BM        _____________ !  x  BUNK-NUMBER                       P3      __  ↩
!
BN        _____________ !  _  SAILOR                            *G2     __  ↩
!
BO        _____________ !  _  AGE                               P2      __  ↩
!
BP        _____________ !  _  NAME                              A30     __  ↩
!
BQ        _____________ !  _  EXPERIENCE                        A1      __  ↩
!
BR        _____________ !  _  LANGUAGES                         A3      __  ↩
!
                        !                                                   ↩
!
                      +More: - +-----------------------------------------+
                                                                            ↩
```

3 Press Enter.

The fields appear in the Field Name column of the Worksheet.

You can also enter the names directly into the Field Name column.

To Determine Display Sequence

1 Type 1 in the Sequence column next to the field `START-HARBOR`.
2 Type 2 in the Sequence column next to the field `START-DATE`.
3 Type 3 in the Sequence column next to the field `END-DATE`.
4 Type 4 in the Sequence column next to the field `BUNK-NUMBER`.

To Define Selection Criteria

The report requires information for cruises with a range of start harbors. You must define two dynamic input fields in which you can enter the first value of the field `START-HARBOR` you want to see and the last value you want to see when the transaction is run.

1 Press PF10.

The `SELECTION` command is issued and the Selection Editor appears.

2 Enter START-HARBOR = in the editor area.
3 Press PF10.

The `CONTINUE` command is issued and the Value window appears.

4 Select Define Dynamic Input Field.
5 Press Enter.

The Define User Field window appears.

6 Type Start1 in the `Name or Value` field.
7 Overtype the existing entry in the Length field with 5.

```
17:15                      ***** Super Natural *****                1998-03-15
SAMPLE8                       - Selection Editor -                     SNZUL-S
                                                                            ↩

                         +----------------Define User Field----------------+
      1  < START-HARBOR = ! Field:                                          ↩
!
      2  <                !                                                  ↩
!
      3  <               ! Name or value .. start1_________________________ !
      4  <                ! Format ......... A                              ↩
!
      5  <                ! Length ......... 5_                             ↩
!
      6  <                ! Dec. places .... _                              ↩
!
      7  <               ! Subfield of .... ________________________________ !
      8  <                ! Offset ......... ___                            ↩
!
      9  <                ! Dynamic input .. #                              ↩
!
     10  <                !                                                  ↩
!
     11  <               +--------------------------------------------------+
```

The `Dynamic Input` field is already marked.

8 Press Enter.

The field name `START1` appears in the first editor line.

9 Type the logical operator `THRU` after `START1`.

10 Press PF10.

The `CONTINUE` command is issued and the Value window appears.

11 Select Define Dynamic Input Field.

12 Press Enter.

The Define User Field window appears.

13 Type Start2 in the `Name or Value` field.

14 Overtype the existing entry in the Length field with 5.

15 Press Enter.

The Selection Editor has the following content:

```
17.46                      ***** Super Natural *****                1998-03-15
SAMPLE8                       - Selection Editor -                     SNZUL-S
                                                                            ↩

                                                                            ↩

      1  < START-HARBOR = START1 THRU START2                           >    1
      2  <                                                             >    2
      3  <                                                             >    3
      4  <                                                             >    4
      5  <                                                             >    5
```

Note: You can also enter START-HARBOR =START1 THRU START2 directly in the editor area and use the `CHECK` command to prompt you through defining the dynamic input fields.

To Edit the Title Element

1 Issue the `LAYOUT` command. You can abbreviate this command to `LA`.

The Natural Report Manager Layout Overview screen appears:

```
10:36                  *** NATURAL REPORT MANAGER ***              1998-03-16
Layout LSAMPLE8               - Layout Overview -                     NRMPAGE
                                                                            ↩

                    +-----------------------------------+                   ↩

                    I               Title               I                   ↩

                    +-----------------------------------+                   ↩

                    +-----------------------------------+                   ↩

                    I               Header              I                   ↩

                    I                                   I                   ↩

                    +-----------------------------------+                   ↩

                    +-----------------------------------+                   ↩

                    I                List               I                   ↩

                    I                                   I                   ↩

                    I                                   I                   ↩

                    I                                   I                   ↩

                    I                                   I                   ↩

                    I                                   I                   ↩

                    I                                   I                   ↩

                    I                                   I                   ↩

                    +-----------------------------------+                   ↩

                                                                            ↩

Command ===>                                                                ↩

Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help  Set   Exit  Field Edit  Flip              Tech              Canc ↩
```

2 Position the cursor in the Title layout element.

3 Press PF9.

The Layout Editor appears with the default Title element in the editor area.

4 Enter the line command `..D3` in the first line of the editor area.

The editor area is now empty.

5 Position the cursor in information section A where the transaction fields are displayed.

6 Press PF2 until the fields `*DATX` and `*TIMX` are displayed.

```
11:50                  *** NATURAL REPORT MANAGER ***              1998-03-16
Layout LSAMPLE8               - Layout Editor -                       NRMEDIT
                                                                 More:      ↩
>
  Transaction Fields                      Delimiter Class    Attrib.  Color  ↩

1 START1                          A5       Blank     Text     Default        ↩

2 START2                          A5       _         Text     Intens.        ↩

3 *TIMX                           T        (         Output   Default        ↩

4 *DATX                           D        )         Output   Intens.        ↩

5 *PROGRAM                        A8                                        ↩

6 *PAGE-NUMBER                   P5.0     Escape Char. = .   Header Char. = &
All   ---010---+----+----+---030-- ( Title ) +---050---+----+----+---070--- Typ
                                                                          ___
                                                                          ___
                                                                          ___
                                                                          ___
                                                                          ___
                                                                          ___
                                                                          ___
                                                                          ___
                                                                          ___
                                                                            ↩

Command ===>                                                                ↩

Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help  Set   Exit  Field Edit  Flip  -     +     Tech  <     >     Canc ↩
```

7 Type Run on at position 10 in the second editor line.

8 Type the output delimiter for default output - here the open bracket character (followed by the number 4to position the `*DATX` field after the text.

9 Press Enter.

10 Type at at position 26.

11 Type the output delimiter for default output - here the open bracket character (followed by the number 3to position the `*TIMX` field after the text.

12 Type the text Start harbors starting at position 10in the third editor line.

13 Position the field `Start1` with the output delimiter for intensified output - here the close bracket character)- at position 23.

14 Type the text up to but not including starting at position 30 in the third editor line.

15 Position the field `Start2` with the output delimiter for intensified output - here the close bracket character) - at position 53.

16 Enter the line command `..I` in the third line of the editor area to insert an empty line after the title text.

The editor area has the following content:

```
10:46                  *** NATURAL REPORT MANAGER ***              1998-03-17
Layout LSAMPLE8               - Layout Editor -                       NRMEDIT
                                                                 More:      ↩
>
  Transaction Fields                      Delimiter Class    Attrib.  Color  ↩

1 CRUISE-ID                      N8.0     Blank     Text     Default         ↩

2 CRUISE-TYPE                    A1       _         Text     Intens.         ↩

3 CRUISE-STATUS                  A1       (         Output   Default         ↩

. START                          *G1      )         Output   Intens.         ↩

4 START-DATE                     N8.0                                        ↩

5 START-TIME                    N6.0     Escape Char. = .   Header Char. = &
All   ---010---+----+----+---030-- ( Title ) +---050---+----+----+---070--- Typ
                                                                           Ttl
          Run on(XXXXXXXX at(XXXXXXXX                                      Ttl
          Start harbors)XXXXX up to but not including)XXXXX                Ttl
                                                                           Ttl
                                                                           ___
                                                                           ___
                                                                           ___
                                                                           ___
                                                                           ___
                                                                             ↩

Command ===>                                                                 ↩

Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help  Set   Exit  Field Edit  Flip  -     +     Tech  <     >     Canc
```

To Run the Transaction

1 Press PF2.

The Layout Overview screen appears.

2 Press PF8.

The Worksheet appears:

```
15:16                      ***** Super Natural *****                1998-03-16
SAMPLE8                          - Worksheet -                          SN3011
                                                                            ↩

Ref DB    Field Name                        Seq   S/C  Func Def  Info Del   ↩

AE  1K 2  START-DATE ....................   L__   ___   __   __   __   __   ↩

AH  1K 2  END-DATE ......................   L__   ___   __   __   __   __   ↩

AJ  1K    START-HARBOR ..................   L__   ___   __   __   __   __   ↩

AU  1  2  BUNK-NUMBER ...................   L__   ___   __   __   __   __   ↩

BE   #    START1 ........................   L__   ___   __   __   __   __   ↩

BF   #    START2 ........................   L__   ___   __   __   __   __   ↩

BK   V    *DATX ..........................   L__   ___   __   __   __   __   ↩

BL   V    *TIMX ..........................   L__   ___   __   __   __   __   ↩

BM        ________________________________   ___   ___   __   __   __   __   ↩

BN        ________________________________   ___   ___   __   __   __   __   ↩

BO        ________________________________   ___   ___   __   __   __   __   ↩

BP        ________________________________   ___   ___   __   __   __   __   ↩

BQ        ________________________________   ___   ___   __   __   __   __   ↩

BR        ________________________________   ___   ___   __   __   __   __   ↩

                                                                            ↩

                                                                            ↩

Layout has been successfully modified                                       ↩

Command ===>                                                                ↩

Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help  Next  Exit  Field Incl  Flip    -     +         Sel   Run   Canc ↩
```

You can now either save the transaction and execute it later or you can run it to see the report immediately.

3 Issue the `RUN` command. This command is allocated to PF11.

You can also issue the `RUN` command directly from the Layout Editor.

The Dynamic Input Value window appears:

```
15:16                    ***** Super Natural *****                 1998-03-16
SAMPLE8                         - Worksheet -                         SN3011
                                                                           ↩

Ref DB    Field Name                        Seq    +-- Dynamic Input Value --+
AE  1K 2  START-DATE ....................    L__    !  Transaction:  ISAMPLE8 !
AH  1K 2  END-DATE ......................    L__    !                         ↩
!
AJ  1K    START-HARBOR ..................    L__    ! START1 .. _____         ↩
!
AU  1  2  BUNK-NUMBER ...................    L__    ! START2 .. _____         ↩
!
BE   #    START1 ........................   L__    +-------------------------+
```

4 Type D in the `Start1` field.

5 Type F in the `Start2` field.

This will find start harbors which begin with `D` or `E`. If there is a start harbor with the name `F`, it will also be displayed.

6 Press Enter.

The report is generated:

```
                                                                        ↩
         Run on 1998-03-17 at 11:45:03                                  ↩
                                                                        ↩
         Start harbors D     up to but not including F                  ↩
                                                                        ↩
    START-HARBOR     START-DATE END-DATE  BUNK-NUMBER                   ↩
-------------------- ---------- --------- -----------                   ↩
                                                                        ↩
DAKKAR                 19910818  19910921           5                   ↩
DUBROVNIK              19910406  19910419           7                   ↩
EL SALVADOR            19920412  19920425           4                   ↩
ELBA                   19911012  19911025           6                   ↩
ELBA                   19910915  19910928           4                   ↩
ELBA                   19910907  19910920           6                   ↩
ESPIRITO SANTO         19911020  19911109           5                   ↩
                                                                        ↩
                                                                        ↩
                                                                        ↩
                                                                        ↩
                                                                        ↩
                                                                        ↩
                                                                        ↩
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
            Print Exit              Flip          +                     Canc ↩
```

```
                                                                        ↩
        Run on 1998-03-17 at 11:45:03                                   ↩
                                                                        ↩
        Start harbors D     up to but not including F                   ↩
                                                                        ↩
   START-HARBOR     START-DATE END-DATE  BUNK-NUMBER                    ↩
-------------------- ---------- --------- -----------                   ↩
                                                                        ↩
 *** End of report ***                                                  ↩
                                                                        ↩
 Number of records processed: = 7                                       ↩
```

7 Press Enter.

The Worksheet appears.

8 Press PF11

The Dynamic Input Value window appears.

9 Type U in the `Start1` field.

10 Type W in the `Start2` field.

11 Press Enter.

The report is generated:

```
                                                                          ↩
         Run on 1998-03-17 at 11:58:04                                    ↩
                                                                          ↩
         Start harbors U     up to but not including W                    ↩
                                                                          ↩
    START-HARBOR     START-DATE END-DATE  BUNK-NUMBER                     ↩
-------------------- ---------- --------- -----------                     ↩
                                                                          ↩
VALENCIA               19920516  19920529           4                     ↩
VALENCIA               19911005  19911018           6                     ↩
VILAMOURA              19920104  19920117           6                     ↩
VILAMOURA              19920215  19920228           6                     ↩
VILAMOURA              19920404  19920417           4                     ↩
VIRGIN ISLANDS         19920405  19920418           6                     ↩
VIRGIN ISLANDS         19920419  19920509           6                     ↩
VIRGIN ISLANDS         19910209  19910223           6                     ↩
                                                                          ↩
                                                                          ↩
                                                                          ↩
                                                                          ↩
                                                                          ↩
                                                                          ↩
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
            Print Exit              Flip          +                     Canc
```

```
                                                                        ↩
        Run on 1998-03-17 at 11:58:04                                   ↩
                                                                        ↩
        Start harbors U     up to but not including W                   ↩
                                                                        ↩
   START-HARBOR     START-DATE END-DATE  BUNK-NUMBER                    ↩
-------------------- ---------- --------- -----------                   ↩
                                                                        ↩
 *** End of report ***                                                  ↩
                                                                        ↩
 Number of records processed: = 8                                       ↩
```

Note: Notice the new data in the title.

11 Sample 9: RPC Service in Context Mode with Primary, Secondary and Lookup files

- Create the Transaction SAMPLE9 135
- Generate the RPC Service 142
- Proceed the data on your PC 145

Task: Generate an RPC service based on the travelling information to process on your PC via Excel.

The RPC Generation is executed in Context mode.

Prerequisites

Your administrator has to set the Service Type of the Service Generation Options in you user profile to `R`.

If you Server is running under Natural Security, you have to set up your RPC example client to run this example correctly.

To set up the RPC sample client for Natural Security

1 Execute the Program *USR1071P* from the system library *SYSEXT* in your Natural for Windows.

2 Fill the following fields in the appearing screens as follows:

- Set `RPC Data` field to `X`
- Set `Code` field to `T`
- Set `User-ID` field to the Logon-ID of Natural Mainframe
- Set `User ID's Password` field to the Password of Natural Mainframe

Transaction Specification

Primary File	*SAG-TOURS-E-YACHT*
Secondary File	*SAG-TOURS-E-CRUISE*
Link field in primary file	`YACHT-ID`
Link field in secondary file	`ID-YACHT`
Lookup File	*SAG-TOURS-E-PERSON*
Link field in secondary file	`ID-SKIPPER`
Link field in lookup file	`PERSON-ID`
Display Fields	1: `YACHT-NAME` 2: `YACHT-ID` 3: `START-DATE` 4: `START-HARBOR` 5: `DESTINATION-HARBOR` 6: `FIRST-NAME-1` 7: `SURNAME` 8: `COUNTRY`
Selection Criteria	YACHT-ID EQ 140 THRU 180 AND ID-SKIPPER GT 0

This section covers the following topics:

- Create the Transaction SAMPLE9
- Generate the RPC Service
- Proceed the data on your PC

Create the Transaction SAMPLE9

To Add a Transaction

1 Issue the `ADD TRANSACTION SAMPLE9` command.

The Add Transaction window appears with the transaction name already entered in the `Transaction ID`field.

2 Type the description Context Mode with Primary, Secondary and Lookup Files in the `Description` field (optional).

To Choose Primary File

The report requires data from the file*SAG-TOURS-E-YACHT*.

1 Type the file name *SAG-TOURS-E-YACHT* in the File `Name` field. You can alternatively use the `Asterisk (*) List` function.

2 Press Enter.

The Worksheet appears.

To Choose Secondary File

1 Issue the `INCLUDE` command

The Include Files window appears.

2 Enter *SAG-TOURS-E-CRUISE* in the `Secondary File` field.

```
17:31                     ***** Super Natural *****                 2000-10-13
SAMPLE9                          - Worksheet -                          SN3011
                                                                            ↩

Ref DB    Field Name    +--------------------Include Files--------------------+
BE         _____________ !                                                    ↩
!
BF        _____________ ! Primary File ..... SAG-TOURS-E-YACHT _____________ !
BG        _____________ ! Secondary File ... sag-tours-e-cruise_____________ !
BH         _____________ !                                                    ↩
!
BI        _____________ ! Add Lookup File .. ________________________________ !
BJ         _____________ ! Process Lookups .. _                               ↩
!
BK         _____________ !                                                    ↩
!
BL        _____________ +-----------------------------------------------------+
BM         ________________________________   ___   ___   __   __   __   __   ↩

BN         ________________________________   ___   ___   __   __   __   __   ↩

BO         ________________________________   ___   ___   __   __   __   __   ↩

BP         ________________________________   ___   ___   __   __   __   __   ↩

BQ         ________________________________   ___   ___   __   __   __   __   ↩

BR         ________________________________   ___   ___   __   __   __   __   ↩

                                                                            ↩

                                                                            ↩

Fill in required definitions                                                ↩

Command ===>                                                                ↩

Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help        Exit              Flip                                Canc ↩
```

Note: You can also use the `Asterisk (*) List` function.

The Define File Link window appears.

3 Type `YACHT-ID` in the `Link Field in Primary File` field.

4 Type `ID-YACHT` in the `Link Field in Secondary File` field.

```
17:31                     ***** Super Natural *****                 2000-10-13
SAMPLE9                          - Worksheet -                          SN3011
                                                                            ↩

Ref DB    Field Name    +--------------- +----------Define File Link----------+
BE         _____________ !                !                                    ↩
!
BF         _____________ ! Primary File . ! Primary File                       ↩
!
BG         _____________ ! Secondary File !   SAG-TOURS-E-YACHT                ↩
!
BH         _____________ !                ! Link field in primary file        ↩
!
BI        _____________ ! Add Lookup Fil !   yacht-id_________________________ !
BJ         _____________ ! Process Lookup ! From position .. ...               ↩
!
BK         _____________ !                !   to position .. ...               ↩
!
BL         _____________ +--------------- !                                    ↩
!
BM         ______________________________ ! Secondary File                     ↩
!
BN         ______________________________ !   SAG-TOURS-E-CRUISE              ↩
!
BO         ______________________________ ! Link field in secondary file      ↩
!
BP        _______________________________ !   id-yacht_________________________ !
BQ         ______________________________ !                                    ↩
!
BR        _______________________________ +-----------------------------------+
```

Note: You can also use the `Asterisk (*) List` function to review the field list for each file.

5 Press Enter.

The Define File Link window closes.

6 Press Enter.

The Include Files window closes.

To Choose Lookup File

1 Issue the `INCLUDE` command.

The Include Files window appears.

2 Enter *SAG-TOURS-E-PERSON* in the `Add Lookup File` field.

Note: You can also use the `Asterisk (*) List` function.

The Define File Lookup window appears.

3 Type `ID-SKIPPER` in the `Lookup Link File` field.

4 Type `PERSON-ID` in the `Lookup Field in Lookup File`.

Note: You can also use the `Asterisk (*) List` function to review the field list for each file.

5 Press Enter.

Because the `Select Lookup Display Fields` field is marked by default, the Field Selection List window for the lookup file appears.

6 Mark the fields `SURNAME`, `FIRST-NAME-1` and `COUNTRY` to select them.

To Choose Fields

The report requires data stored in the fields `YACHT-ID, YACHT-NAME, START-DATE, START-HARBOR, DESTINATION-HARBOR, ID-YACHT, ID-SKIPPER, PERSON-ID, SURNAME, FIRST-NAME-1, COUNTRY`.

- Choose the fields as described in Step 3 of *Sample 1*.

To Determine Display Sequence

1 Type 1 in the Sequence column next to the field `YACHT-NAME`.

2 Type 2 in the `Sequence` column next to the field `YACHT-ID`.

3 Type 3 in the Sequence column next to the field `START-DATE`.

4 Type 4 in the Sequence column next to the field `START-HARBOR`.

5 Type 5 in the Sequence column next to the field `DESTINATION-HARBOR`.

6 Type 6 in the Sequence column next to the field `FIRST-NAME-1`.

7 Type 7 in the Sequence column next to the field `SURNAME`.

8 Type 8 in the Sequence column next to the field `COUNTRY`.

Now your worksheet looks as follows:

```
18:27                      ***** SUPER NATURAL *****                2000-09-29
SAMPLE9                          - Worksheet -                          SN3011

Ref DB    Field Name                          Seq   S/C  Func Def  Info Del
AA  1K    YACHT-ID .......................    2__   ___   __   __   __
AB  1K    YACHT-NAME .....................    1__   ___   __   __   __
AS  2K 2  START-DATE .....................    3__   ___   __   __   __
AX  2K    START-HARBOR ...................    4__   ___   __   __   __
AY  2K    DESTINATION-HARBOR .............    5__   ___   __   __   __
AZ  2K    ID-YACHT .......................    ___   ___   __   __   __
BG  2K 2  ID-SKIPPER .....................    ___   ___   __   __   __
BS  LK 3  PERSON-ID ......................                    __   __
BT  L  3  SURNAME ........................    7__   ___   __   __   __
BU  L  3  FIRST-NAME-1 ...................    6__   ___   __   __   __
BX  L  3  COUNTRY ........................    8__   ___   __   __   __
BY        ________________________________
BZ        ________________________________
CA        ________________________________


Transaction SAMPLE9 successfully executed
Command ===>
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help  Next  Exit  Field Incl  Flip    -     +         Sel   Run   Canc
```

To Define Selection Criteria

The report requires information on the Yacht-IDs and the Skipper-IDs.

1 Press PF10.

The `SELECTION` command is issued and the Selection Editor appears.

2 Enter YACHT-ID EQ 140 THRU 180 AND ID-SKIPPER GT 0 in the editor area.

The Selection Editor has the following content:

```
18:19                      ***** SUPER NATURAL *****                2000-09-29
SAMPLE9                       - Selection Editor -                     SNZUL-S


      1  < YACHT-ID EQ 140 THRU 180 AND ID-SKIPPER GT 0                 >    1
      2  <                                                              >    2
      3  <                                                              >    3
      4  <                                                              >    4
      5  <                                                              >    5
      6  <                                                              >    6
      7  <                                                              >    7
      8  <                                                              >    8
      9  <                                                              >    9
     10  <                                                              >   10
     11  <                                                              >   11
     12  <                                                              >   12
     13  <                                                              >   13
     14  <                                                              >   14
     15  <                                                              >   15

Define selection lines or use CONTINUE
Command ===>
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help  Next  Exit  Field Check Flip    -     +         Cont  Run   Canc
```

Note: You can use the `CHECK` command to prompt you through defining the dynamic input fields.

To Run the Transaction

1 Issue the `RUN` command. This command is allocated to PF11.

2 Press Enter.

The report is displayed:

```
2000-09-29  YACHT-ID EQ 140 THRU 180 AND ID-SKIPPER GT 0                  1
18:25:10
ISAMPLE9
         YACHT-NAME           YACHT-ID  START-DATE     START-HARBOR      DESTI
------------------------------ --------- ---------- -------------------- ------

FLYING DUTCHMAN                      144   19911012 ELBA                ALGHER
FLYING DUTCHMAN                       144   19911026 ALGHERO             PALMA
FLYING DUTCHMAN                      144   19911109 PALMA               ANDRAI
FLYING DUTCHMAN                      144   19911123 ANDRAITX            ALICAN
FLYING DUTCHMAN                      144   19911207 ALICANTE            MALAGA
FLYING DUTCHMAN                      144   19911221 MALAGA              VILAMO
FLYING DUTCHMAN                      144   19920104 VILAMOURA           HUELVA
FLYING DUTCHMAN                       144   19920118 HUELVA              CADIZ
FLYING DUTCHMAN                      144   19920201 CADIZ               VILAMO
FLYING DUTCHMAN                      144   19920215 VILAMOURA           HUELVA
FLYING DUTCHMAN                      144   19920229 HUELVA              JOSE B
CUCA RACHA                           145   19911019 KORFU               KALAMA
CUCA RACHA                            145   19911005 AQUILEIA            KORFU
CUCA RACHA                           145   19911102 KALAMATA            HERAKL
CUCA RACHA                           145   19911116 HERAKLEION          HERAKL

Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
            Print Exit              Flip          +   Posi    <     >   Canc
```

```
2000-09-29  YACHT-ID EQ 140 THRU 180 AND ID-SKIPPER GT 0                  15
18:27:14
ISAMPLE9
         YACHT-NAME           YACHT-ID  START-DATE     START-HARBOR      DESTI
------------------------------ --------- ---------- -------------------- ------

 *** End of report ***

 Number of records processed: = 196
```

3 Press PF3.

The Worksheet appears:

```
18:27                      ***** SUPER NATURAL *****                2000-09-29
SAMPLE9                          - Worksheet -                          SN3011

Ref DB    Field Name                          Seq   S/C  Func Def  Info Del
AA  1K    YACHT-ID .......................    2__   ___   __   __   __
AB  1K    YACHT-NAME .....................    1__   ___   __   __   __
AS  2K 2  START-DATE .....................    3__   ___   __   __   __
AX  2K    START-HARBOR ...................    4__   ___   __   __   __
AY  2K    DESTINATION-HARBOR .............    5__   ___   __   __   __
AZ  2K    ID-YACHT .......................    ___   ___   __   __   __
BG  2K 2  ID-SKIPPER .....................    ___   ___   __   __   __
BS  LK 3  PERSON-ID ......................                 __   __
BT  L  3  SURNAME ........................    7__   ___   __   __   __
BU  L  3  FIRST-NAME-1 ...................    6__   ___   __   __   __
BX  L  3  COUNTRY ........................    8__   ___   __   __   __
BY        ________________________________
BZ        ________________________________
CA        ________________________________


Transaction SAMPLE9 successfully executed
Command ===>
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help  Next  Exit  Field Incl  Flip    -     +         Sel   Run   Canc
```

Generate the RPC Service

To generate the RPC Service for the transaction SAMPLE9

1 Issue the command `GENERATE RPC` in the Worksheet of the transaction SAMPLE9 and press Enter.

The following window appears:

```
 18:27                      ***** SUPER NATURAL *****                2000-09-29
 SAMPLE9                          - Worksheet -                          SN3011
                                      ↩
!-----------------------------------------!
 Ref DB    Field Name                !          RPC-Service Generation        ↩
   !
 AA  1K    YACHT-ID ................ !                                        ↩
   !
 AB  1K    YACHT-NAME ............. !  The RPC Service will be stored with   ↩
   !
 AS  2K 2  START-DATE ............. !      Object Name .............        ↩
   !
 AX  2K    START-HARBOR ........... !      in Library ..............        ↩
   !
 AY  2K    DESTINATION-HARBOR ...... !     with Generation Mode ..... Context ↩
  !
 AZ  2K    ID-YACHT ................ !      and Result Record Limit .. 1092   ↩
   !
 BG  2K 2  ID-SKIPPER .............  !                                        ↩
   !
 BS  LK 3  PERSON-ID ............... !    _  Generate with these options      ↩
   !
 BT  L  3  SURNAME ................ !    X  Change options before generation ↩
   !
 BU  L  3  FIRST-NAME-1 ........... !    _  Modify Transaction               ↩
   !
 BX  L  3  COUNTRY ................ !-----------------------------------------!
 BY        ___________________________
 BZ        _________________________________
 CA        _________________________________



 Command ===>
 Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
                                     Flip                                  Canc
```

2 Mark the option `Change options before generation` and press Enter.

The following window appears:

```
19:49                      ***** SUPER NATURAL *****                2000-10-17
SAMPLE9                          - Worksheet -                          SN3011
                              !-----------------------------------------------!
Ref DB    Field Name            !   RPC-Service - Modify Generation Options  ↩
 !
AA  1K    YACHT-ID ...........  !                                            ↩
 !
AB  1K    YACHT-NAME .........  !  RPC Service Object Name ........          ↩
 !
AS  2K 2  START-DATE .........  !              Library ............          ↩
 !
AX  2K    START-HARBOR .......  !                                            ↩
 !
AY  2K   DESTINATION-HARBOR .  !  Generation Mode ................ C  Context !
AZ  2K    ID-YACHT ...........  !  Limit of Result Records ........ 1092___  ↩
 !
BG  2K 2  ID-SKIPPER .........  !  (Max. possible Result Records .. 1092    ) ↩
!
BS  LK 3  PERSON-ID ..........  !-----------------------------------------------!
BT  L  3  SURNAME ............         !                           !
BU  L  3  FIRST-NAME-1 ............    ! _  Modify Transaction    !
BX  L  3  COUNTRY ................    !---------------------------!
BY        __________________________
BZ        ________________________________
CA        ________________________________



Command ===>
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
                                     Flip                                Canc
```

3 Specify the RPC Service Object Name RPCSMPL1 and the Library NSNSAMPL to generate the RPC Service.

4 Select Generation Mode `Context`.

5 Delete the Record Limit and press Enter to receive the recommended record limit for the generation.

6 Press Enter.

The RPC Service is generated. You can view it by logging on to the respective library and choosing the RPC Service Object. You will find the description of the source in the *Administration* documentation.

Proceed the data on your PC

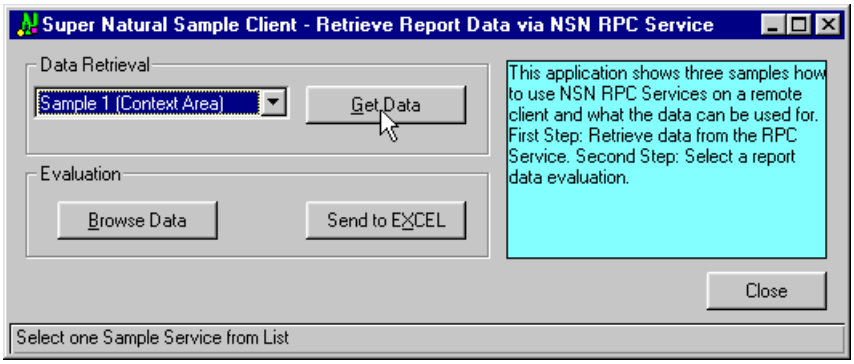
To proceed the data on your PC

Before you can work with the generated RPC Service, you have to set up your Natural environment and load the example data from the Documentation CD to your Natural for Windows environment. You will find the description how to set up your environment for the RPC Service in the *Setting up Super Natural* documentation.

1 Open your Natural for Windows.

2 Execute **User Libraries > NSNSAMPL > Dialogs > Menu** by using the `Execute` button in the symbol list.

The following dialog appears:



3 Select *Sample 1* (Context Area) in the `Data Retrieval` field.

4 Choose `Get Data` to load the sample data.

Now you can browse the data.

5 In order to proceed with this data on your PC, send it to Excel by selecting the `Send to Excel` button.

The data is sent to Excel and inserted into a table.

12 Sample 10: RPC Service in Context Mode with Dynamic Input

- Create the Transaction SAMPLE10 149
- Generate the RPC Service 155
- Proceed the data on your PC 158

Task: Generate an RPC service based on travelling information by entering a start and end value. Then process the service on your PC via Excel.

This transaction uses dynamic input fields to enable you to view different ranges of data each time you run it. The RPC Generation is executed in Context mode.

Prerequisites

Your administrator has to set the Service Type of the Service Generation Options in you user profile to `R`.

If you Server is running under Natural Security, you have to set up your RPC example client to run this example correctly.

To set up the RPC sample client for Natural Security

1 Execute the Program *USR1071P* from the system library *SYSEXT* in your Natural for Windows.

2 Fill the following fields in the appearing screens as follows:

- Set `RPC Data` field to `X`
- Set `Code` field to `T`
- Set `User-ID` field to the Logon-ID of Natural Mainframe
- Set `User ID's Password` field to the Password of Natural Mainframe

Transaction Specification

Primary File	*SAG-TOURS-E-PERSON*
Display Fields	1: `FIRST-NAME-1` 2: `SURNAME` 4: `STREET-NUMBER` 6: `ZIP-CODE` 7: `CITY` 9: `COUNTRY`
Sort Fields	S1: `COUNTRY` S2: `SURNAME`
Dynamic Input Fields	`NAME-START` `NAME-END`
Selection Criteria	SURNAME = NAME-START THRU NAME-END

This section covers the following topics:

- **Create the Transaction SAMPLE10**
- **Generate the RPC Service**

■ **Proceed the data on your PC**

Create the Transaction SAMPLE10

To Add a Transaction

1 Issue the `ADD TRANSACTION SAMPLE10` command.

The Add Transaction window appears with the transaction name already entered in the `Transaction ID` field.

2 Type the description Dynamic Input Fields in the Description field (optional).

To Choose File

The report requires data from the file*SAG-TOURS-E-PERSON*.

1 Type the file name *SAG-TOURS-E-PERSON* in the `File Name` field. You can alternatively use the `Asterisk (*) List` function.

2 Press Enter.

The Worksheet appears.

To Choose Fields

The report requires data stored in the fields `SURNAME`, `FIRST-NAME-1`, `STREET-NUMBER`, `COUNTRY`, `ZIP-CODE` and `CITY`.

■ Choose the fields as described in Step 3 of *Sample 1*.

To Determine Display Sequence

1 Type 1 in the Sequence column next to the field `FIRST-NAME-1`.

2 Type 2 in the Sequence column next to the field `SURNAME`.

3 Type 4 in the Sequence column next to the field `STREET-NUMBER`.

4 Type 6 in the Sequence column next to the field `ZIP-CODE`.

5 Type 7 in the Sequence column next to the field `CITY`.

6 Type 9 in the Sequence column next to the field `COUNTRY`.

To Define Sort Order

1 Type S1 in the S/C column next to the field `COUNTRY`.

2 Type S2 in the S/C column next to the field `SURNAME`.

To Define Dynamic Input Fields

1 Type `NAME-START` into the Field Name column and press Enter.

The Define User Field window appears:

2 Fill in the required information as shown in the following screen:

```
 20:10                      ***** SUPER NATURAL *****                2000-10-17
 SAMPLE10                          - Worksheet -                        SN3011
                            ↩
!-------------------------------------------------------!
 Ref DB    Field Name      !                  Define User Field              ↩
    !
 AE  1K 2  SURNAME ....... !  Field: NAME-START                              ↩
    !
 AF  1  2  FIRST-NAME-1 .. !                                                 ↩
    !
 AL  1  2  STREET-NUMBER . !  Name or value .. NAME-START___________________ ↩
    !
 AM  1K 2  COUNTRY ....... !  Format ......... a                             ↩
    !
 AN  1K 2  ZIP-CODE ...... !  Length ......... 20_                           ↩
    !
 AO  1K 2  CITY .......... !  Dec. places .... _                            ↩
    !
 BI       NAME-START .... !  Subfield of .... ________________________________ ↩
  !
 BJ        _______________ !  Offset ......... ___                           ↩
    !
 BK        _______________ !  Dynamic input .. #                            ↩
    !
 BL        _______________ ↩
!-------------------------------------------------------!
 BM        _______________
 BN        ________________________________
 BO        ________________________________
 BP        ________________________________



 Command ===>
 Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
       Help        Exit              Flip                                Canc
```

3 Press Enter.

The Worksheet appears. The field `NAME-START` is inserted as a dynamic input field.

4 Proceed for the dynamic input field `NAME-END` just as `NAME-START`.

Now your Worksheet looks as follows:

```
20:18                        ***** SUPER NATURAL *****                2000-10-17
A-SMPL2                            - Worksheet -                          SN3011

Ref DB    Field Name                          Seq   S/C  Func Def  Info Del
AE  1K 2  SURNAME .......................     2__   S2_   __   __   __
AF  1  2  FIRST-NAME-1 ..................     1__   ___   __   __   __
AL  1  2  STREET-NUMBER .................     4__   ___   __   __   __
AM  1K 2  COUNTRY .......................     9__   S1_   __   __   __
AN  1K 2  ZIP-CODE ......................     6__   ___   __   __   __
AO  1K 2  CITY ..........................     7__   ___   __   __   __
BI   #    NAME-START ....................     ___   ___   __   __   __
BJ   #    NAME-END ......................     ___   ___   __   __   __
BK        ________________________________
BL        ________________________________
BM        ________________________________
BN        ________________________________
BO        ________________________________
BP        ________________________________


Fill in required definitions
Command ===>
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help  Next  Exit  Field Incl  Flip    -     +         Sel   Run   Canc
```

To Define Selection Criteria

The report requires information on the field `SURNAME`. You must use two dynamic input fields in which you can enter the first value of the field `SURNAME` you want to see and the last value you want to see when the transaction is run.

1 Press PF10.

The `SELECTION` command is issued and the Selection Editor appears.

2 Enter SURNAME = NAME-START THRU NAME-END in the editor area.

The Selection Editor has the following content:

```
10:08                      ***** SUPER NATURAL *****                2000-10-04
SAMPLE10                       - Selection Editor -                    SNZUL-S


      1  < SURNAME = NAME-START THRU NAME-END                          >    1
      2  <                                                             >    2
      3  <                                                             >    3
      4  <                                                             >    4
      5  <                                                             >    5
      6  <                                                             >    6
      7  <                                                             >    7
      8  <                                                             >    8
      9  <                                                             >    9
     10  <                                                             >   10
     11  <                                                             >   11
     12  <                                                             >   12
     13  <                                                             >   13
     14  <                                                             >   14
     15  <                                                             >   15

Define selection lines or use CONTINUE
Command ===>
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help  Next  Exit  Field Check Flip    -     +         Cont  Run   Canc
```

To Run the Transaction

1 Issue the `RUN` command. This command is allocated to PF11.

2 Press Enter

The following dialog appears:

```
10:08                      ***** SUPER NATURAL *****                2000-10-04
SAMPLE10                       - Selection Editor -                    SNZUL-S
                                        !-------------------------------------!
                                          !         Dynamic Input Value       ↩
 !
      1  < SURNAME = NAME-START THRU NAM !   Transaction:  SAMPLE10          ↩
 !
      2  <                                !                                   ↩
 !
      3  <                               !  NAME-START .. g_________________ !
      4  <                               !  NAME-END .... k_________________ !
      5  <                                !                                   ↩
 !
      6  <                               !-------------------------------------!
      7  <                                                                  >    7
      8  <                                                                  >    8
      9  <                                                                  >    9
     10  <                                                                  >   10
     11  <                                                                  >   11
     12  <                                                                  >   12
     13  <                                                                  >   13
     14  <                                                                  >   14
     15  <                                                                  >   15

Define selection lines or use CONTINUE

Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
            Print Exit              Flip          +   Posi    <     >   Canc
```

3 Enter the Start and End value and press Enter.

The report is displayed:

```
2000-10-04  SURNAME = NAME-START THRU NAME-END                          1
10:13:20
SAMPLE10
    FIRST-NAME-1           SURNAME           STREET-NUMBER      ZIP-CODE
-------------------- -------------------- -------------------- ---------- -----

ANDREAS              GASSNER              KAERTNER STR. 9      7000       STUTT
PETRA                GOLDSTEIN            WALDWEG 8            8190       WOLFR
HEINZ                GRAF                 SCHLOSSWEG 1         6100       GRIES
MARGARETHE           GROTH                BEETHOVENSTR. 34     6000       FRANK
JOPP                 GROTHE               WIELANDSTR. 109      6000       FRANK
FLORIAN              GRUBER               DIEBURGERSTR. 54     6100       DARMS
ESTER                GRUENBERG            ROSENWEG 17          6103       GRIES
MARTHA               GUHLICH              THERESE GIESE STR 89 6450       HANAU
ROSWITHA             HAIBACH              POSTFACH 332         6450       HANAU
YASMIN               HASSEIN              DOMWEG 8             6000       FRANK
CORNELIA             HECK                 MARIENSTRASSE 18     8000       MUENC
CLEMENS              HEILBROCK            OPELSTRASSE 49       6000       FRANK
GERHARD              HEINZELMANN          VIKTORIASTR. 43      6100       DARMS
JOHANNA              HELDMANN             DARMSTAEDTERWEG 34   6104       SEEHE
ANTON                HESCHMANN            MEERKATZSTR. 8       6000       FRANK

Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
            Print Exit              Flip          +   Posi    <     >   Canc
```

```
2000-10-04  SURNAME = NAME-START THRU NAME-END                         13
10:14:11
SAMPLE10
    FIRST-NAME-1           SURNAME           STREET-NUMBER      ZIP-CODE
-------------------- -------------------- -------------------- ---------- -----

 *** End of report ***

 Number of records processed: = 178
```

4 Press PF3.

The Worksheet appears:

```
10:15                      ***** SUPER NATURAL *****                2000-10-04
SAMPLE10                          - Worksheet -                        SN3011

Ref DB    Field Name                          Seq   S/C  Func Def  Info Del
AE  1K 2  SURNAME .......................     2__   S2_   __   __   __
AF  1  2  FIRST-NAME-1 ..................     1__   ___   __   __   __
AL  1  2  STREET-NUMBER .................     4__   ___   __   __   __
AM  1K 2  COUNTRY .......................     9__   S1_   __   __   __
AN  1K 2  ZIP-CODE ......................     6__   ___   __   __   __
AO  1K 2  CITY ..........................     7__   ___   __   __   __
BI   #    NAME-START ....................     ___   ___   __   __   __
BJ   #    NAME-END ......................     ___   ___   __   __   __
BK        ________________________________
BL        ________________________________
BM        ________________________________
BN        ________________________________
BO        ________________________________
BP        ________________________________


SELECTION successfully terminated
Command ===>
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help  Next  Exit  Field Incl  Flip    -     +         Sel   Run   Canc
```

Generate the RPC Service

To generate the RPC Service for the transaction SAMPLE10

1 Issue the command `GENERATE RPC` in the Worksheet of the transaction SAMPLE10 and press Enter.

The following window appears:

```
10:15                      ***** SUPER NATURAL *****                2000-10-04
SAMPLE10                          - Worksheet -                         SN3011
                                   !-----------------------------------------!
Ref DB    Field Name                 !         RPC-Service Generation        ↩
  !
AE  1K 2  SURNAME ................  !                                       ↩
  !
AF  1  2  FIRST-NAME-1 ............  ! The RPC Service will be stored with   ↩
  !
AL  1  2  STREET-NUMBER ...........  !     Object Name ..............        ↩
  !
AM  1K 2  COUNTRY ................  !     in Library ...............        ↩
  !
AN  1K 2  ZIP-CODE ...............  !    with Generation Mode ..... Context ↩
 !
AO  1K 2  CITY ...................  !     and Result Record Limit .. 1638   ↩
  !
BI   #    NAME-START .............  !                                       ↩
  !
BJ   #    NAME-END ...............  !   _  Generate with these options     ↩
  !
BK        __________________________  !   X  Change options before generation ↩
  !
BL        __________________________  !   _  Modify Transaction              ↩
  !
BM       __________________________  !-----------------------------------------!
BN        __________________________
BO        ________________________________
BP        ________________________________



Command ===>
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
                                     Flip                                Canc
```

2 Mark the option `Change options before generation` and press Enter.

The following window appears:

```
20:18                      ***** SUPER NATURAL *****                2000-10-17
A-SMPL2                          - Worksheet -                          SN3011
                              !-----------------------------------------------!
Ref DB    Field Name            !   RPC-Service - Modify Generation Options  ↩
 !
AE  1K 2  SURNAME ............  !                                            ↩
 !
AF  1  2  FIRST-NAME-1 .......  !  RPC Service Object Name ........ ________ ↩
 !
AL  1  2  STREET-NUMBER ......  !             Library ............ ________ ↩
 !
AM  1K 2  COUNTRY ............  !                                            ↩
 !
AN  1K 2  ZIP-CODE ...........  !  Generation Mode ................ C  Context !
AO  1K 2  CITY ...............  !  Limit of Result Records ........ 1638___  ↩
 !
BI   #    NAME-START .........  !  (Max. possible Result Records .. 1638    ) ↩
!
BJ   #    NAME-END ...........  !-----------------------------------------------!
BK         ____________________        !                          !
BL         ___________________________   !  _  Modify Transaction  !
BM         ___________________________   !-------------------------!
BN         ___________________________
BO         ________________________________
BP         ________________________________



Command ===>
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
                                     Flip                                 Canc
```

3 Specify the RPC Service Object Name RPCSMPL2 and the Library `NSNSAMPL` to generate the RPC Service.

4 Select Generation Mode `Context`.

5 Delete the Record Limit and press Enter to receive the recommended record limit for the generation.

6 Press Enter.

The RPC Service is generated. You can view it by logging on to the respective library and choosing the RPC Service Object. You will find the description of the source in the *Administration* documentation.

Proceed the data on your PC

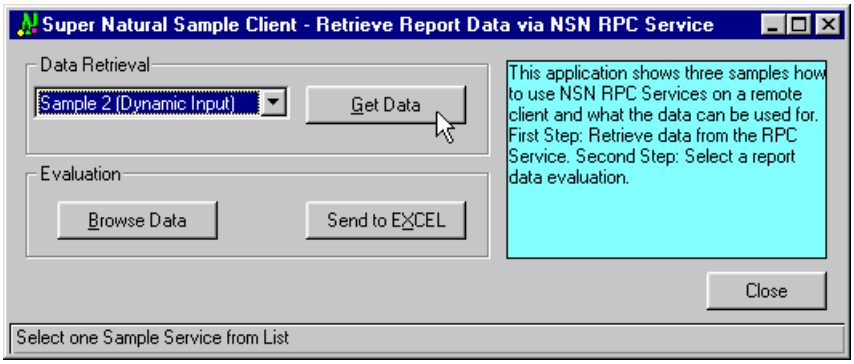
To proceed the data on your PC

Before you can work with the generated RPC Service, you have to set up your Natural environment and load the example data from the Documentation CD to your Natural for Windows environment. You will find the description how to set up your environment for the RPC Service in *Setting up Super Natural*.

1 Open your Natural for Windows.

2 Execute **User Libraries > NSNSAMPL > Dialogs > Menu** by using the `Execute` button in the symbol list.

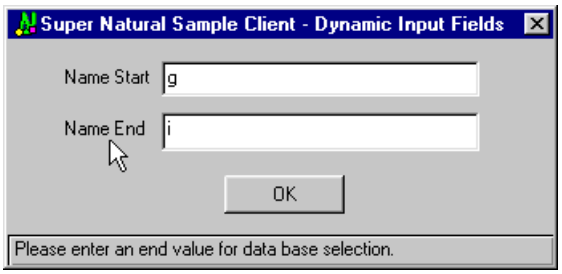
The following dialog appears:



3 Select *Sample 2* (Dynamic Input) in the `Data Retrieval` field.

4 Choose `Get Data` to load the sample data.

The following dialog appears:



5 Enter the start and end value as dynamic input.

6 Select `OK`.

The data is loaded from your mainframe environment and displayed on your PC where you can browse the data.

7 In order to proceed with this data on your PC, send it to Excel by selecting the `Send to Excel` button.

The selected data is sent to Excel and inserted into a table.

13 Sample 11: RPC Service in Direct Mode with Summary Functionality

- Create the Transaction SAMPLE11 163
- Generate the RPC Service 167
- Proceed the data on your PC 170

Task: Generate an RPC service based on the shipping data using the summary functionality to process on your PC via Excel.

This transaction uses the summary function to show cumulated data for statistical purposes. The RPC Generation is executed in Direct Mode.

Prerequisites

Your administrator has to set the Service Type of the Service Generation Options in you user profile to `R`.

If you Server is running under Natural Security, you have to set up your RPC example client to run this example correctly.

To set up the RPC sample client for Natural Security

1 Execute the Program *USR1071P* from the system library *SYSEXT* in your Natural for Windows.

2 Fill the following fields in the appearing screens as follows:

- Set `RPC Data` field to `X`
- Set `Code` field to `T`
- Set `User-ID` field to the Logon-ID of Natural Mainframe
- Set `User ID's Password` field to the Password of Natural Mainframe

Transaction Specification

Primary File	*SAG-TOURS-E-CONTRACT*
Display System Functions	cnt `DATE-BOOKING` sum `PRICE` avg `PRICE` max `PRICE` min `PRICE` old `BOOK-MONTH`
Control Field	C1: `DATE-BOOKING`
Selection Criteria	DATE-BOOKING = 19910101 THRU 19911231 AND DATE-CANCELLATION EQ 0

This section covers the following topics:

- **Create the Transaction SAMPLE11**
- **Generate the RPC Service**
- **Proceed the data on your PC**

Create the Transaction SAMPLE11

To Add a Transaction

- Issue the `ADD TRANSACTION SAMPLE11` command.

  The Add Transaction window appears with the transaction name already entered in the `Transaction ID` field.

To Choose File

The report requires data from the file *SAG-TOURS-E-CONTRACT*.

1. Type the file name *SAG-TOURS-E-CONTRACT* in the `File Name` field. You can alternatively use the `Asterisk (*) List` function.
2. Press Enter.

   The Worksheet appears.

To Choose Fields

The report requires data stored in the fields `CONTRACT-ID`, `PRICE`, `DATE-BOOKING` and `DATE-CANCELLATION`.

- Choose the fields as described in Step 3 of *Sample 1*.

To Create the User Field BOOK-MONTH

1. Type `BOOK-MONTH` into the Field Name column and press Enter.

   The Define User Field window appears:
2. Fill in the required information as shown in the following screen:

```
 20:41                      ***** SUPER NATURAL *****                2000-10-17
 SAMPLE11                          - Worksheet -                        SN3011
                            ↩
!-------------------------------------------------------!
 Ref DB    Field Name      !                  Define User Field              ↩
    !
 AA  1K    CONTRACT-ID ... !  Field: BOOK-MONTH                             ↩
    !
 AC  1     PRICE ......... !                                                ↩
    !
 AF  1K   DATE-BOOKING .. !  Name or value .. BOOK-MONTH_____________________ ↩
  !
 AG  1K    DATE-CANCELLATI !  Format ......... n                            ↩
    !
 AR        BOOK-MONTH_____ !  Length ......... 6 _                          ↩
    !
 AS        _______________ !  Dec. places .... _                            ↩
    !
 AT       _______________ !  Subfield of .... DATE-BOOKING_________________ ↩
  !
 AU        _______________ !  Offset ......... ___                          ↩
    !
 AV        _______________ !  Dynamic input .. _                            ↩
    !
 AW        _______________ ↩
!-------------------------------------------------------!
 AX        _______________
 AY        ________________________________
 AZ        ________________________________
 BA        ________________________________



 Command ===>
 Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
       Help        Exit              Flip                                Canc
```

3 Press Enter.

The Worksheet appears. The field `BOOK-MONTH` is inserted as a user field.

To Create the Control Break

- Type C1 in the Control column next to the field `DATE-BOOKING`.

To Define the System Function

1 Type SF in the Func column next to the field `PRICE`.

2 Press Enter.

The Specify System Functions screen appears.

3 Mark `Sum`, `Avg`, `Max` and `Min` next to the Control Field `DATE-BOOKING`.

4 Type SF in the Func column next to the field `DATE-BOOKING`.

5 Press Enter.

The Specify System Functions window appears.

6 Mark `Cnt` next to the Control Field `DATE-BOOKING`.

7 Press Enter.

The Worksheet appears.

To Determine Display Sequence

- Type 1 in the Sequence column next to the field `BOOK-MONTH`.

Now your worksheet looks as follows:

```
10:46                      ***** SUPER NATURAL *****                2000-10-04
SAMPLE11                         - Worksheet -                          SN3011

Ref DB    Field Name                          Seq   S/C  Func Def  Info Del
AA  1K    CONTRACT-ID ....................    ___   ___   __   __   __   __
AC  1     PRICE ..........................    ___   ___   >_   __   __
AF  1K    DATE-BOOKING ...................    ___   C1_   >_   __   __
AG  1K    DATE-CANCELLATION ..............    ___   ___   __   __   __
AR   U    BOOK-MONTH .....................    1__   ___   __   __   __
AS        ________________________________
AT        ________________________________
AU        ________________________________
AV        ________________________________
AW        ________________________________
AX        ________________________________
AY        ________________________________
AZ        ________________________________
BA        ________________________________


Enter "*" in Fieldname column to select fields or enter NEXT
Command ===>
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help  Next  Exit  Field Incl  Flip    -     +         Sel   Run   Canc
```

To Define Selection Criteria

The report requires information on the Date of booking and cancellation.

1 Press PF10.

The SELECTION command is issued and the Selection Editor appears.

2 Enter DATE-BOOKING = 19910101 THRU 19911231 AND DATE-CANCELLATION EQ 0 in the editor area.

The Selection Editor has the following content:

```
10:49                      ***** SUPER NATURAL *****                2000-10-04
SAMPLE11                       - Selection Editor -                    SNZUL-S


      1  < DATE-BOOKING = 19910101 THRU 19911231                        >    1
      2  < AND DATE-CANCELLATION EQ 0                                   >    2
      3  <                                                              >    3
      4  <                                                              >    4
      5  <                                                              >    5
      6  <                                                              >    6
      7  <                                                              >    7
      8  <                                                              >    8
      9  <                                                              >    9
     10  <                                                              >   10
     11  <                                                              >   11
     12  <                                                              >   12
     13  <                                                              >   13
     14  <                                                              >   14
     15  <                                                              >   15

Define selection lines or use CONTINUE
Command ===>
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help  Next  Exit  Field Check Flip    -     +         Cont  Run   Canc
```

To Run the Transaction

1 Issue the RUN command. This command is allocated to PF11.

2 Press Enter.

The report is displayed.

```
2000-10-17  DATE-BOOKING = 19910101 THRU 19911231                        1
20:55:09    AND DATE-CANCELLATION EQ 0
SAMPLE11
     BOOK-MONTH
     ----------

** Control Break (1) **
     DATE-BOOKING :   19910127
Old      199101
Cnt       DATE-BOOKING =       100
Sum       PRICE =          415590.000
Avg       PRICE =            4155.900
Max       PRICE =           18700.000
Min       PRICE =            1360.000









Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
             Print Exit              Flip          +                     Canc
```

3 Press PF3.

The Worksheet appears again.

Generate the RPC Service

To generate the RPC Service for the transaction SAMPLE11

1 Issue the command `GENERATE RPC` in the Worksheet of the transaction SAMPLE11 and press Enter.

The following window appears:

```
10:56                      ***** SUPER NATURAL *****                2000-10-04
SAMPLE11                          - Worksheet -                         SN3011
                                    !----------------------------------------!
Ref DB    Field Name                  !         RPC-Service Generation       ↩
 !
AA  1K    CONTRACT-ID .............  !                                      ↩
 !
AC  1     PRICE ...................  ! The RPC Service will be stored with  ↩
 !
AF  1K    DATE-BOOKING ............  !     Object Name .............        ↩
 !
AG  1K    DATE-CANCELLATION .......  !     in Library ..............        ↩
 !
AR   U    BOOK-MONTH ..............  !     with Generation Mode ..... Direct ↩
 !
AS        __________________________  !     and Result Record Limit .. 5      ↩
 !
AT        __________________________  !                                      ↩
 !
AU        __________________________  !   _  Generate with these options     ↩
 !
AV        __________________________  !   X  Change options before generation ↩
 !
AW        __________________________  !   _  Modify Transaction             ↩
 !
AX       __________________________  !----------------------------------------!
AY        __________________________
AZ        ________________________________
BA        ________________________________



Command ===>
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
                                     Flip                                Canc
```

2 Mark the option `Change options before generation` and press Enter.

The following window appears:

```
 20:57                      ***** SUPER NATURAL *****                2000-10-17
 SAMPLE11                          - Worksheet -                         SN3011
                                 !---------------------------------------------!
 Ref DB    Field Name            !   RPC-Service - Modify Generation Options ↩
  !
 AA  1K    CONTRACT-ID .........  !                                          ↩
  !
 AC  1     PRICE ...............  !  RPC Service Object Name ........        ↩
  !
 AF  1K    DATE-BOOKING ........  !              Library ............        ↩
  !
 AG  1K    DATE-CANCELLATION ...  !                                          ↩
  !
 AR   U   BOOK-MONTH ..........  !  Generation Mode ................ D  Direct !
 AS        ______________________  !  Limit of Result Records ........ 5______ ↩
  !
 AT        ______________________  !  (Max. possible Result Records .. 714     ↩
) !
 AU       _______________________ !---------------------------------------------!
 AV        _________________________      !                                 !
 AW        ___________________________    !   _  Modify Transaction        !
 AX        ___________________________    !--------------------------------!
 AY        ___________________________
 AZ        ________________________________
 BA        ________________________________



 Command ===>
 Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
                                      Flip                                 Canc
```

3 Specify the RPC Service Object Name RPCSMPL3 and the Library `NSNSAMPL` to generate the RPC Service.

4 Select Generation Mode `Direct`.

5 Set the Record Limit to 5 and press Enter to limit the number of retrieved records.

6 Press Enter.

The RPC Service is generated. You can view it by logging on to the respective library and choosing the RPC Service Object. You will find the description of the source in the *Administration* documentation.

Proceed the data on your PC

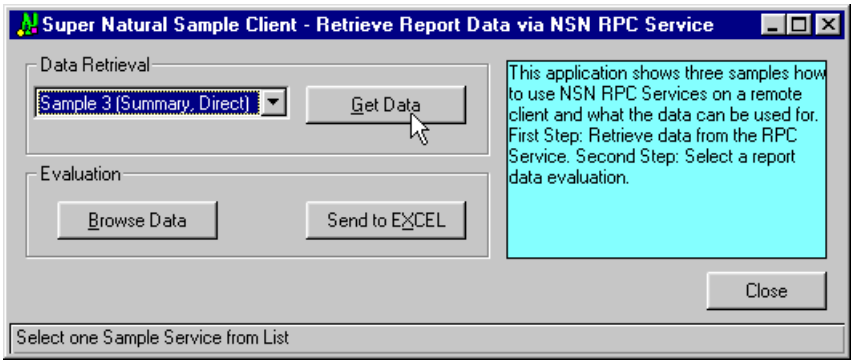
To proceed the data on your PC

Before you can work with the generated RPC Service, you have to set up your Natural environment and load the example data from the Documentation CD to your Natural for Windows environment. You will find the description how to set up your environment for the RPC Service in *Setting up Super Natural*.

1 Open your Natural for Windows.

2 Execute **User Libraries > NSNSAMPL > Dialogs > Menu** by using the `Execute` button in the symbol list.

The following dialog appears:



3 Select *Sample 3* (Summary, Direct) in the `Data Retrieval` field.

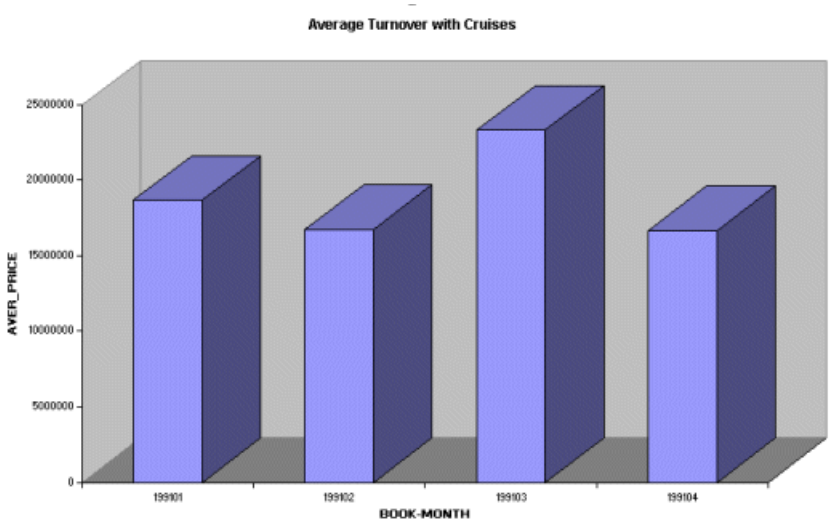
4 Choose `Get Data` to load the sample data.

5 Select `OK`.

The data is loaded from your mainframe environment and displayed on your PC where you can browse the data.

6 In order to proceed with this data on your PC, send it to Excel by selecting the `Send to Excel` button.

The selected data is sent to Excel, inserted into a table and displayed as a chart.


Average Turnover with Cruises
25000000
20000000
15000000
10000000
5000000
0
AVER_PRICE
199101
199102
199103
199104
BOOK-MONTH