

# Referenzierte Beispielprogramme

Dieses Kapitel enthält einige zusätzliche Beispielprogramme, auf die im *Leitfaden zur Programmierung* verwiesen wird.

Diese Beispielprogramme befinden sich ebenso wie die übrigen im *Leitfaden zur Programmierung* enthaltenen Beispiele in der Library SYSEXPB.

- READ-Statement
  - FIND-Statement
  - Geschachtelte READ- und FIND-Statements
  - ACCEPT- und REJECT-Statements
  - AT START OF DATA- und AT END OF DATA-Statements
  - DISPLAY- und WRITE-Statements
  - DISPLAY-Statement
  - Spaltenüberschriften
  - Feldausgabe-relevante Parameter
  - Editiermasken
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  - AT BREAK-Statement
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  - Systemvariablen
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- 

## READ-Statement

Auf das folgende Beispiel wird im Abschnitt *Datenbankzugriffe* verwiesen.

### READX03 - READ-Statement (mit LOGICAL-Klausel)

```
** Example 'READX03': READ (with LOGICAL clause)
*****
DEFINE DATA LOCAL
1 EMPLOY-VIEW VIEW OF EMPLOYEES
  2 NAME
  2 PERSONNEL-ID
  2 JOB-TITLE
END-DEFINE
*
LIMIT 8
```

```

READ EMPLOY-VIEW LOGICAL BY PERSONNEL-ID
  DISPLAY NOTITLE *ISN      NAME
                  'PERS-NO' PERSONNEL-ID
                  'POSITION' JOB-TITLE
END-READ
END
    
```

Ausgabe des Programms READX03:

ISN	NAME	PERS-NO	POSITION
204	SCHINDLER	11100102	PROGRAMMIERER
205	SCHIRM	11100105	SYSTEMPROGRAMMIERER
206	SCHMITT	11100106	OPERATOR
207	SCHMIDT	11100107	SEKRETAERIN
208	SCHNEIDER	11100108	SACHBEARBEITER
209	SCHNEIDER	11100109	SEKRETAERIN
210	BUNGERT	11100110	SYSTEMPROGRAMMIERER
211	THIELE	11100111	SEKRETAERIN

## FIND-Statement

Auf die folgenden Beispiele wird im Abschnitt *Datenbankzugriffe* verwiesen.

### FINDX07 - FIND-Statement (mit mehreren Klauseln)

```

** Example 'FINDX07': FIND (with several clauses)
*****
DEFINE DATA LOCAL
1 EMPLOY-VIEW VIEW OF EMPLOYEES
  2 NAME
  2 FIRST-NAME
  2 CITY
  2 SALARY      (1)
  2 CURR-CODE  (1)
END-DEFINE
*
FIND EMPLOY-VIEW WITH PHONETIC-NAME = 'JONES' OR = 'BECKR'
                      AND CITY      = 'BOSTON' THRU 'NEW YORK'
                      BUT NOT      'CHAPEL HILL'
                      SORTED BY NAME
                      WHERE SALARY (1) < 28000
  DISPLAY NOTITLE NAME FIRST-NAME CITY SALARY (1)
END-FIND
END
    
```

Ausgabe des Programms FINDX07:

NAME	FIRST-NAME	CITY	ANNUAL SALARY
BAKER	PAULINE	DERBY	4450
JONES	MARTHA	KALAMAZOO	21000
JONES	KEVIN	DERBY	7000

**FINDX08 - FIND-Statement (mit LIMIT)**

```

** Example 'FINDX08': FIND (with LIMIT)
**           Demonstrates FIND statement with LIMIT option to
**           terminate program with an error message if the
**           number of records selected exceeds a specified
**           limit (no output).
*****
DEFINE DATA LOCAL
1 EMPLOY-VIEW VIEW OF EMPLOYEES
  2 NAME
  2 JOB-TITLE
END-DEFINE
*
FIND EMPLOY-VIEW WITH LIMIT (5) JOB-TITLE = 'SALES PERSON'
  DISPLAY NAME JOB-TITLE
END-FIND
END
    
```

Von Programm FINDX08 verursachter Laufzeitfehler:

NAT1005 More records found than specified in search limit.

**FINDX09 - FIND-Statement (unter Verwendung von \*NUMBER, \*COUNTER, \*ISN)**

```

** Example 'FINDX09': FIND (using *NUMBER, *COUNTER, *ISN)
*****
DEFINE DATA LOCAL
1 EMPLOY-VIEW VIEW OF EMPLOYEES
  2 DEPT
  2 NAME
END-DEFINE
*
FIND EMPLOY-VIEW WITH CITY = 'BOSTON'
  WHERE DEPT = 'TECH00' THRU 'TECH10'
  DISPLAY NOTITLE
  'COUNTER' *COUNTER NAME DEPT 'ISN' *ISN
  AT START OF DATA
  WRITE '(TOTAL NUMBER IN BOSTON:' *NUMBER ')' /
  END-START
END-FIND
END
    
```

Ausgabe des Programms FINDX09:

COUNTER	NAME	DEPARTMENT CODE	ISN
(TOTAL NUMBER IN BOSTON:			7 )
1	STANWOOD	TECH10	782
2	PERREAULT	TECH10	842

**FINDX10 – FIND-Statement (in Kombination mit READ)**

```

** Example 'FINDX10': FIND (combined with READ)
*****
DEFINE DATA LOCAL
1 EMPLOY-VIEW VIEW OF EMPLOYEES
  2 PERSONNEL-ID
    
```

```

2 NAME
2 FIRST-NAME
1 VEHIC-VIEW VIEW OF VEHICLES
2 PERSONNEL-ID
2 MAKE
END-DEFINE
*
LIMIT 15
*
EMP. READ EMPLOY-VIEW BY NAME STARTING FROM 'JONES'
  VEH. FIND VEHIC-VIEW WITH PERSONNEL-ID = PERSONNEL-ID (EMP.)
    IF NO RECORDS FOUND
      MOVE '*** NO CAR ***' TO MAKE
    END-NOREC
    DISPLAY NOTITLE
      NAME (EMP.) (IS=ON)
      FIRST-NAME (EMP.) (IS=ON)
      MAKE (VEH.)
    END-FIND
  END-READ
END

```

Ausgabe des Programms FINDX10:

NAME	FIRST-NAME	MAKE
JONES	VIRGINIA	CHRYSLER
	MARSHA	CHRYSLER
		CHRYSLER
	ROBERT	GENERAL MOTORS
	LILLY	FORD
		MG
	EDWARD	GENERAL MOTORS
	MARTHA	GENERAL MOTORS
	LAUREL	GENERAL MOTORS
	KEVIN	DATSUN
	GREGORY	FORD
JOPER	MANFRED	*** NO CAR ***
JOUSSELIN	DANIEL	RENAULT
JUBE	GABRIEL	*** NO CAR ***
JUNG	ERNST	*** NO CAR ***
JUNKIN	JEREMY	*** NO CAR ***
KAISER	REINER	*** NO CAR ***

### FINDX11 - FIND NUMBER-Statement (mit \*NUMBER)

```

** Example 'FINDX11': FIND NUMBER (with *NUMBER)
*****
DEFINE DATA LOCAL
1 EMPLOY-VIEW VIEW OF EMPLOYEES
2 FIRST-NAME
2 NAME
2 CITY
2 JOB-TITLE
2 SALARY          (1)
*
1 #PERCENT          (N.2)
1 REDEFINE #PERCENT
2 #WHOLE-NBR       (N2)
1 #ALL-BOST        (N3.2)
1 #SECR-ONLY       (N3.2)

```

```

1 #BOST-NBR          (N3)
1 #SECR-NBR          (N3)
END-DEFINE
*
F1. FIND NUMBER EMPLOY-VIEW WITH CITY = 'BOSTON'
F2. FIND NUMBER EMPLOY-VIEW WITH CITY = 'BOSTON'
      AND JOB-TITLE = 'SECRETARY'
*
MOVE *NUMBER(F1.) TO #ALL-BOST #BOST-NBR
MOVE *NUMBER(F2.) TO #SECR-ONLY #SECR-NBR
DIVIDE #ALL-BOST INTO #SECR-ONLY GIVING #PERCENT
*
WRITE TITLE LEFT JUSTIFIED UNDERLINED
  'There are' #BOST-NBR 'employees in the Boston offices.' /
  #SECR-NBR '(=' #WHOLE-NBR (EM=99%))' 'are secretaries.'
*
SKIP 1
FIND EMPLOY-VIEW WITH CITY          = 'BOSTON'
      AND JOB-TITLE = 'SECRETARY'
  DISPLAY NAME FIRST-NAME JOB-TITLE SALARY (1)
END-FIND
END

```

Ausgabe des Programms FINDX11:

```

There are      7 employees in the Boston offices.
      3 (= 42%) are secretaries.
-----

```

NAME	FIRST-NAME	CURRENT POSITION	ANNUAL SALARY
SHAW	LESLIE	SECRETARY	18000
CREMER	WALT	SECRETARY	20000
COHEN	JOHN	SECRETARY	16000

## Geschachtelte READ- und FIND-Statements

Auf die folgenden Beispiele wird im Abschnitt *Datenbank-Verarbeitungsschleifen* verwiesen.

### READX04 – READ-Statement (in Kombination mit FIND und den Systemvariablen \*NUMBER und \*COUNTER)

```

** Example 'READX04': READ (in combination with FIND and the system
**                      variables *NUMBER and *COUNTER)
*****
DEFINE DATA LOCAL
1 EMPLOY-VIEW VIEW OF EMPLOYEES
  2 PERSONNEL-ID
  2 NAME
  2 FIRST-NAME
1 VEHIC-VIEW VIEW OF VEHICLES
  2 PERSONNEL-ID
  2 MAKE
END-DEFINE
*
LIMIT 10
RD. READ EMPLOY-VIEW BY NAME STARTING FROM 'JONES'
  FD. FIND VEHIC-VIEW WITH PERSONNEL-ID = PERSONNEL-ID (RD.)

```

```

IF NO RECORDS FOUND
  ENTER
  END-NOREC
  /*
  DISPLAY NOTITLE
    *COUNTER (RD.)(NL=8) NAME           (AL=15) FIRST-NAME (AL=10)
    *NUMBER  (FD.)(NL=8) *COUNTER (FD.)(NL=8) MAKE
  END-FIND
END-READ
END

```

Ausgabe des Programms READX04:

CNT	NAME	FIRST-NAME	NMBR	CNT	MAKE
1	JONES	VIRGINIA	1	1	CHRYSLER
2	JONES	MARSHA	2	1	CHRYSLER
2	JONES	MARSHA	2	2	CHRYSLER
3	JONES	ROBERT	1	1	GENERAL MOTORS
4	JONES	LILLY	2	1	FORD
4	JONES	LILLY	2	2	MG
5	JONES	EDWARD	1	1	GENERAL MOTORS
6	JONES	MARTHA	1	1	GENERAL MOTORS
7	JONES	LAUREL	1	1	GENERAL MOTORS
8	JONES	KEVIN	1	1	DATSUN
9	JONES	GREGORY	1	1	FORD
10	JOPER	MANFRED	0	0	

### LIMITX01 - LIMIT-Statement (für READ- und FIND-Schleifenverarbeitung)

```

** Example 'LIMITX01': LIMIT (for READ, FIND loop processing)
*****
DEFINE DATA LOCAL
1 EMPLOY-VIEW VIEW OF EMPLOYEES
  2 PERSONNEL-ID
  2 FIRST-NAME
  2 NAME
1 VEH-VIEW VIEW OF VEHICLES
  2 PERSONNEL-ID
  2 MAKE
END-DEFINE
*
LIMIT 4
*
READ EMPLOY-VIEW BY NAME STARTING FROM 'A'
  FIND VEH-VIEW WITH PERSONNEL-ID = EMPLOY-VIEW.PERSONNEL-ID
  IF NO RECORDS FOUND
    MOVE 'NO CAR' TO MAKE
  END-NOREC
  DISPLAY PERSONNEL-ID NAME FIRST-NAME MAKE
END-FIND
END-READ
END

```

Ausgabe des Programms LIMITX01:

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PERSONNEL-ID	NAME	FIRST-NAME	MAKE
	ABELLAN	KEPA	NO CAR
30000231	ACHIESON	ROBERT	FORD
	ADAM	SIMONE	NO CAR
20008800	ADKINSON	JEFF	GENERAL MOTORS

## ACCEPT- und REJECT-Statements

Auf die folgenden Beispiele wird im Abschnitt *Datensätze mit ACCEPT / REJECT auswählen* verwiesen.

### ACCEPX04 - ACCEPT IF ... LESS THAN ...-Statement

```

** Example 'ACCEPX04': ACCEPT IF ... LESS THAN ...
*****
DEFINE DATA LOCAL
1 EMPLOY-VIEW VIEW OF EMPLOYEES
  2 PERSONNEL-ID
  2 NAME
  2 JOB-TITLE
  2 SALARY (1)
END-DEFINE
*
LIMIT 20
READ EMPLOY-VIEW BY PERSONNEL-ID = '20017000'
  ACCEPT IF SALARY (1) LESS THAN 38000
  DISPLAY NOTITLE PERSONNEL-ID NAME JOB-TITLE SALARY (1)
END-READ
END

```

Ausgabe des Programms ACCEPX04:

PERSONNEL ID	NAME	CURRENT POSITION	ANNUAL SALARY
20017000	CREMER	ANALYST	34000
20017100	MARKUSH	TRAINEE	22000
20017400	NEEDHAM	PROGRAMMER	32500
20017500	JACKSON	PROGRAMMER	33000
20017600	PIETSCH	SECRETARY	22000
20017700	PAUL	SECRETARY	23000
20018000	FARRIS	PROGRAMMER	30500
20018100	EVANS	PROGRAMMER	31000
20018200	HERZOG	PROGRAMMER	31500
20018300	LORIE	SALES PERSON	28000
20018400	HALL	SALES PERSON	30000
20018500	JACKSON	MANAGER	36000
20018800	SMITH	SECRETARY	24000
20018900	LOWRY	SECRETARY	25000

**ACCEPX05 – ACCEPT IF ... AND ...-Statement**

```

** Example 'ACCEPX05': ACCEPT IF ... AND ...
*****
DEFINE DATA LOCAL
1 EMPLOY-VIEW VIEW OF EMPLOYEES
  2 NAME
  2 CITY
  2 JOB-TITLE
  2 SALARY (1:2)
END-DEFINE
*
LIMIT 6
READ EMPLOY-VIEW PHYSICAL WHERE SALARY(2) > 0
  ACCEPT IF SALARY(1) > 10000
  AND SALARY(1) < 50000
  DISPLAY (AL=15) 'SALARY I' SALARY (1) 'SALARY II' SALARY (2)
  NAME JOB-TITLE CITY
END-READ
END

```

Ausgabe des Programms ACCEPX05:

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SALARY I	SALARY II	NAME	CURRENT POSITION	CITY
48000	46000	SPENGLER	SACHBEARBEITER	DARMSTADT
45000	40000	SPECK	SACHBEARBEITER	DARMSTADT
48000	46000	SCHINDLER	PROGRAMMIERER	HEPPENHEIM
36000	32000	SCHMIDT	SEKRETAERIN	HEPPENHEIM

**ACCEPX06 – REJECT IF ... OR ...-Statement**

```

** Example 'ACCEPX06': REJECT IF ... OR ...
*****
DEFINE DATA LOCAL
1 EMPLOY-VIEW VIEW OF EMPLOYEES
  2 PERSONNEL-ID
  2 SALARY (1)
  2 JOB-TITLE
  2 CITY
  2 NAME
END-DEFINE
*
LIMIT 20
READ EMPLOY-VIEW LOGICAL BY PERSONNEL-ID = '20017000'
  REJECT IF SALARY (1) < 20000
  OR SALARY (1) > 26000
  DISPLAY NOTITLE SALARY (1) NAME JOB-TITLE CITY
END-READ
END

```

Ausgabe des Programms ACCEPX06:

ANNUAL SALARY	NAME	CURRENT POSITION	CITY
22000	MARKUSH	TRAINEE	LOS ANGELES
22000	PIETSCH	SECRETARY	VISTA
23000	PAUL	SECRETARY	NORFOLK
24000	SMITH	SECRETARY	SILVER SPRING
25000	LOWRY	SECRETARY	LEXINGTON

## AT START OF DATA- und AT END OF DATA-Statements

Auf die folgenden Beispiele wird im Abschnitt *AT START/END OF DATA-Statements* verwiesen.

### ATENDX01 – AT END OF DATA-Statement

```

** Example 'ATENDX01': AT END OF DATA
*****
DEFINE DATA LOCAL
1 EMPLOY-VIEW VIEW OF EMPLOYEES
  2 PERSONNEL-ID
  2 NAME
  2 JOB-TITLE
END-DEFINE
*
READ (6) EMPLOY-VIEW BY PERSONNEL-ID FROM '20017000'
  DISPLAY NOTITLE NAME JOB-TITLE
  AT END OF DATA
    WRITE / 'LAST PERSON SELECTED:' OLD(NAME)
  END-ENDDATA
END-READ
END

```

Ausgabe des Programms ATENDX01:

NAME	CURRENT POSITION
CREMER	ANALYST
MARKUSH	TRAINEE
GEE	MANAGER
KUNEY	DBA
NEEDHAM	PROGRAMMER
JACKSON	PROGRAMMER

LAST PERSON SELECTED: JACKSON

### ATSTAX02 – AT START OF DATA-Statement

```

** Example 'ATSTAX02': AT START OF DATA
*****
DEFINE DATA LOCAL
1 EMPLOY-VIEW VIEW OF EMPLOYEES
  2 PERSONNEL-ID
  2 FIRST-NAME
  2 NAME
  2 SALARY      (1)
  2 CURR-CODE  (1)
  2 BONUS      (1,1)

```

```

END-DEFINE
*
LIMIT 3
FIND EMPLOY-VIEW WITH CITY = 'MADRID'
  DISPLAY NAME FIRST-NAME SALARY(1) BONUS(1,1) CURR-CODE (1)
/*
  AT START OF DATA
    WRITE NOTITLE *DAT4E /
  END-START
END-FIND
END

```

Ausgabe des Programms ATSTAX02:

NAME	FIRST-NAME	ANNUAL SALARY	BONUS	CURRENCY CODE
-----				
13/12/2004				
DE JUAN	JAVIER	1988000		0 PTA
DE LA MADRID	ANSELMO	3120000		0 PTA
PINERO	PAULA	1756000		0 PTA

### WRITEX09 – WRITE-Statement (in Kombination mit AT END OF DATA)

```

** Example 'WRITEX09': WRITE (in combination with AT END OF DATA )
*****
DEFINE DATA LOCAL
1 EMPLOY-VIEW VIEW OF EMPLOYEES
  2 CITY
  2 NAME
  2 BIRTH
  2 JOB-TITLE
  2 DEPT
END-DEFINE
*
READ (3) EMPLOY-VIEW BY CITY
  DISPLAY NOTITLE NAME BIRTH (EM=YYYY-MM-DD) JOB-TITLE
  WRITE 38T 'DEPT CODE:' DEPT
/*
  AT END OF DATA
    WRITE / 'LAST PERSON SELECTED:' OLD(NAME)
  END-ENDDATA
  SKIP 1
END-READ
END

```

Ausgabe des Programms WRITEX09:

NAME	DATE OF BIRTH	CURRENT POSITION
-----		
SENKO	1971-09-11	PROGRAMMER DEPT CODE: TECH10
GODEFROY	1949-01-09	COMPTABLE DEPT CODE: COMP02
CANALE	1942-01-01	CONSULTANT

DEPT CODE: TECH03

LAST PERSON SELECTED: CANALE

## DISPLAY- und WRITE-Statements

Auf die folgenden Beispiele wird im Abschnitt *Statements DISPLAY und WRITE* verwiesen.

### DISPLX13 – DISPLAY-Statement (zum Vergleich mit WRITEX08 mit WRITE)

```

** Example 'DISPLX13': DISPLAY (compare with WRITEX08 using WRITE)
*****
DEFINE DATA LOCAL
1 EMPLOY-VIEW VIEW OF EMPLOYEES
  2 PERSONNEL-ID
  2 FIRST-NAME
  2 NAME
  2 SALARY (2)
  2 BONUS (1,1)
  2 CITY
END-DEFINE
*
LIMIT 2
READ EMPLOY-VIEW WITH CITY = 'CHAPEL HILL' WHERE BONUS(1,1) NE 0
/*
  DISPLAY 'PERS/ID' PERSONNEL-ID NAME / FIRST-NAME
          '***' '=' SALARY(1:2) 'BONUS' BONUS(1,1) CITY (AL=15)
/*
SKIP 1
END-READ
END
    
```

Ausgabe des Programms DISPLX13:

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PERS ID	NAME FIRST-NAME	ANNUAL SALARY	BONUS	CITY
20027000	CUMMINGS	** 41000	1500	CHAPEL HILL
	PUALA	38900		
20000200	WOOLSEY	** 26000	3000	CHAPEL HILL
	LOUISE	24700		

### WRITEX08 – WRITE-Statement (zum Vergleich mit DISPLX13 mit DISPLAY)

```

** Example 'WRITEX08': WRITE (compare with DISPLX13 using DISPLAY)
*****
DEFINE DATA LOCAL
1 EMPLOY-VIEW VIEW OF EMPLOYEES
  2 PERSONNEL-ID
  2 FIRST-NAME
  2 NAME
  2 SALARY (2)
  2 BONUS (1,1)
  2 CITY
END-DEFINE
    
```

```

*
LIMIT 2
READ EMPLOY-VIEW WITH CITY = 'CHAPEL HILL' WHERE BONUS(1,1) NE 0
/*
WRITE 'PERS/ID' PERSONNEL-ID NAME / FIRST-NAME
      '*** '=' SALARY(1:2) 'BONUS' BONUS(1,1) CITY (AL=15)
/*
SKIP 1
END-READ
END
    
```

Ausgabe des Programms WRITEX08:

```

Page      1                                04-12-13  14:12:43

PERS/ID 20027000 CUMMINGS
PUALA          ** ANNUAL SALARY:      41000      38900 BONUS      1500
CHAPEL HILL

PERS/ID 20000200 WOOLSEY
LOUISE         ** ANNUAL SALARY:      26000      24700 BONUS      3000
CHAPEL HILL
    
```

**DISPLX14 – DISPLAY-Statement (mit AL, SF und nX)**

```

** Example 'DISPLX14': DISPLAY (with AL, SF and nX)
*****
DEFINE DATA LOCAL
1 EMPLOY-VIEW VIEW OF EMPLOYEES
  2 FIRST-NAME
  2 NAME
  2 ADDRESS-LINE (1)
  2 TELEPHONE
  3 AREA-CODE
  3 PHONE
  2 CITY
END-DEFINE
*
READ (3) EMPLOY-VIEW BY NAME STARTING FROM 'W'
  DISPLAY (AL=15 SF=5) NAME CITY / ADDRESS-LINE(1) 2X TELEPHONE
SKIP 1
END-READ
END
    
```

Ausgabe des Programms DISPLX14:

```

Page      1                                04-12-13  14:14:00

      NAME                CITY                TELEPHONE
                ADDRESS
                AREA
                CODE                TELEPHONE
-----
WABER           HEIDELBERG           06221           456452
                ERBACHERSTR. 78

WADSWORTH       DERBY                0332           515365
                56 PINECROFT CO

WAGENBACH       FRANKFURT           069            983218
                BECKERSTR. 4
    
```

**WRITEX09 – WRITE-Statement (in Kombination mit AT END OF DATA)**

```

** Example 'WRITEX09': WRITE (in combination with AT END OF DATA )
*****
DEFINE DATA LOCAL
1 EMPLOY-VIEW VIEW OF EMPLOYEES
  2 CITY
  2 NAME
  2 BIRTH
  2 JOB-TITLE
  2 DEPT
END-DEFINE
*
READ (3) EMPLOY-VIEW BY CITY
  DISPLAY NOTITLE NAME BIRTH (EM=YYYY-MM-DD) JOB-TITLE
  WRITE 38T 'DEPT CODE:' DEPT
  /*
  AT END OF DATA
  WRITE / 'LAST PERSON SELECTED:' OLD(NAME)
  END-ENDDATA
  SKIP 1
END-READ
END

```

Ausgabe des Programms WRITEX09:

NAME	DATE OF BIRTH	CURRENT POSITION
-----	-----	-----
SENKO	1971-09-11	PROGRAMMER DEPT CODE: TECH10
GODEFROY	1949-01-09	COMPTABLE DEPT CODE: COMP02
CANALE	1942-01-01	CONSULTANT DEPT CODE: TECH03
LAST PERSON SELECTED: CANALE		

**DISPLAY-Statement**

Auf folgendes Beispiel wird im Abschnitt *Seitenüberschriften, Seitenvorschübe und Leerzeilen* verwiesen.

**DISPLX21 – DISPLAY-Statement (mit Schrägstrich '/' und zum Vergleich mit WRITE)**

```

** Example 'DISPLX21': DISPLAY (usage of slash '/' in DISPLAY and WRITE)
*****
DEFINE DATA LOCAL
1 EMPLOY-VIEW VIEW OF EMPLOYEES
  2 CITY
  2 NAME
  2 FIRST-NAME
  2 ADDRESS-LINE (1)
END-DEFINE
*
WRITE TITLE LEFT JUSTIFIED UNDERLINED

```

```

      *TIME
      5X 'PEOPLE LIVING IN SALT LAKE CITY'
      21X 'PAGE:' *PAGE-NUMBER /
      15X 'AS OF' *DAT4E //
*
WRITE TRAILER UNDERLINED 'REGISTER OF' / 'SALT LAKE CITY'
*
READ (2) EMPLOY-VIEW WITH CITY = 'SALT LAKE CITY'
  DISPLAY  NAME /
           FIRST-NAME
           'HOME/CITY' CITY
           'STREET/OR BOX NO.' ADDRESS-LINE (1)
SKIP 1
END-READ
END

```

Ausgabe des Programms DISPLX21:

```

14:15:50.1      PEOPLE LIVING IN SALT LAKE CITY      PAGE:      1
                AS OF 13/12/2004

```

```

-----
              NAME                HOME                STREET
              FIRST-NAME          CITY                OR BOX NO.
-----
ANDERSON
JENNY                SALT LAKE CITY        3701 S. GEORGE MASON

SAMUELSON
MARTIN              SALT LAKE CITY        7610 W. 86TH STREET

                                REGISTER OF
                                SALT LAKE CITY
-----

```

## Spaltenüberschriften

Auf das folgende Beispiel wird im Abschnitt *Spaltenüberschriften* verwiesen.

### DISPLX15 – DISPLAY-Statement (mit FC, UC)

```

** Example 'DISPLX15': DISPLAY (with FC, UC)
*****
DEFINE DATA LOCAL
1 EMPLOY-VIEW VIEW OF EMPLOYEES
  2 FIRST-NAME
  2 NAME
  2 ADDRESS-LINE (1)
  2 CITY
  2 TELEPHONE
  3 AREA-CODE
  3 PHONE
END-DEFINE
*
FORMAT AL=12 GC== UC=%
*
READ (3) EMPLOY-VIEW BY NAME STARTING FROM 'R'
  DISPLAY NOTITLE (FC=*)

```

```

NAME FIRST-NAME CITY (FC=- UC=-) /
ADDRESS-LINE(1) TELEPHONE

SKIP 1
END-READ
END

```

Ausgabe des Programms DISPLX15:

```

****NAME**** *FIRST-NAME* ----CITY---- =====TELEPHONE=====
**ADDRESS**
***AREA*** *TELEPHONE**
***CODE***
%%%%%%%%%%%%% %%%%%%%%%%%%%% ----- %%%%%%%%%%%%%% %%%%%%%%%%%%%%

RACKMANN      MARIAN      FRANKFURT  069          375849
              FINKENSTR. 1

RAMAMOORTHY   TY          SEPULVEDA  209          175-1885
              12018 BROOKS

RAMAMOORTHY   TIMMIE      SEATTLE    206          151-4673
              921-178TH PL

```

### DISPLX16 – DISPLAY-Statement (mit '/', 'text', 'text/text')

```

** Example 'DISPLX16': DISPLAY (with '/', 'text', 'text/text')
*****
DEFINE DATA LOCAL
1 EMPLOY-VIEW VIEW OF EMPLOYEES
  2 FIRST-NAME
  2 NAME
  2 ADDRESS-LINE (1)
  2 CITY
  2 TELEPHONE
  3 AREA-CODE
  3 PHONE
END-DEFINE
*
READ (5) EMPLOY-VIEW BY NAME STARTING FROM 'E'
  DISPLAY NOTITLE
  '/'          NAME          (AL=12) /* suppressed header
  'FIRST/NAME' FIRST-NAME (AL=10) /* two-line user-defined header
  'ADDRESS'    CITY /        /* user-defined header
  ' '          ADDRESS-LINE(1) /* 'blank' header
              TELEPHONE (HC=L) /* default header

SKIP 1
END-READ
END

```

Ausgabe des Programms DISPLX16:

```

              FIRST          ADDRESS          TELEPHONE
              NAME
              AREA    TELEPHONE
              CODE
              -----

EAVES      TREVOR      DERBY          0332    657623
              17 HARTON ROAD

ECKERT     KARL        OBERRAMSTADT  06154   99722
              FORSTWEG 22

```

```

ECKHARDT      RICHARD      DARMSTADT
                BRESLAUERPL. 4

EDMUNDSON     LES          TULSA          918      945-4916
                2415 ALSOP CT.

EGGERT        HERMANN     STUTTGART      0711     981237
                RABENGASSE 8

```

## Feldausgabe-relevante Parameter

Auf die folgenden Beispiele wird im Abschnitt *Parameter zur Beeinflussung der Ausgabe von Feldern* verwiesen.

Sie stehen zur Verfügung, um die Benutzung der Parameter LC, IC, TC, AL, NL, IS, ZP und ES und des Statements SUSPEND IDENTICAL SUPPRESS zu demonstrieren:

### DISPLX17 - DISPLAY-Statement (mit NL, AL, IC, LC, TC)

```

** Example 'DISPLX17': DISPLAY (with NL, AL, IC, LC, TC)
*****
DEFINE DATA LOCAL
1 EMPLOY-VIEW VIEW OF EMPLOYEES
  2 FIRST-NAME
  2 NAME
  2 SALARY (1)
  2 BONUS (1,1)
END-DEFINE
*
READ (3) EMPLOY-VIEW BY NAME STARTING FROM 'JONES'
  DISPLAY NOTITLE (IS=ON NL=15)
    NAME
    '- ' '=' FIRST-NAME (AL=12)
    'ANNUAL SALARY' SALARY(1) (LC=USD TC=.00) /
    '+ BONUSES' BONUS(1,1) (IC='+' TC=.00)
  SKIP 1
END-READ
END

```

Ausgabe des Programms DISPLX17:

NAME	FIRST-NAME	ANNUAL SALARY + BONUSES
JONES	- VIRGINIA	USD 46000.00 + 9000.00
	- MARSHA	USD 50000.00 + 0.00
	- ROBERT	USD 31000.00 + 0.00

**DISPLX18 – DISPLAY-Statement (Benutzung von Voreinstellungen für SF, AL, UC, LC, IC, TC und zum Vergleich mit DISPLX19)**

```

** Example 'DISPLX18': DISPLAY (using default settings for SF, AL, UC,
**                          LC, IC, TC and compare with DISPLX19)
*****
DEFINE DATA LOCAL
1 EMPLOY-VIEW VIEW OF EMPLOYEES
  2 NAME
  2 FIRST-NAME
  2 CITY
  2 SALARY      (1)
  2 BONUS       (1,1)
END-DEFINE
*
FIND (6) EMPLOY-VIEW WITH CITY = 'CHAPEL HILL'
  DISPLAY NAME FIRST-NAME SALARY(1) BONUS(1,1)
END-FIND
END
    
```

Ausgabe des Programms DISPLX18:

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NAME	FIRST-NAME	ANNUAL SALARY	BONUS
KESSLER	CLARE	41000	0
ADKINSON	DAVID	24000	0
GEE	TOMMIE	39500	0
HERZOG	JOHN	31500	0
QUILLION	TIMOTHY	30500	0
CUMMINGS	PUALA	41000	1500

**DISPLX19 - DISPLAY-Statement (mit SF, AL, LC, IC, TC und zum Vergleich mit DISPLX18)**

```

** Example 'DISPLX19': DISPLAY (with SF, AL, LC, IC, TC and compare
**                          with DISPLX19)
*****
DEFINE DATA LOCAL
1 EMPLOY-VIEW VIEW OF EMPLOYEES
  2 NAME
  2 FIRST-NAME
  2 CITY
  2 SALARY (1)
  2 BONUS (1,1)
END-DEFINE
*
FORMAT SF=3 AL=15 UC==
*
FIND (6) EMPLOY-VIEW WITH CITY = 'CHAPEL HILL'
  DISPLAY (NL=10)
    NAME
    FIRST-NAME (LC='- ' UC=-)
    SALARY (1) (LC=USD)
    BONUS (1,1) (IC='*** ' TC=' ***')
END-FIND
END
    
```

## Ausgabe des Programms DISPLX19:

Page 1

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NAME	FIRST-NAME	ANNUAL SALARY	BONUS
KESSLER	- CLARE	USD 41000	*** 0 ***
ADKINSON	- DAVID	USD 24000	*** 0 ***
GEE	- TOMMIE	USD 39500	*** 0 ***
HERZOG	- JOHN	USD 31500	*** 0 ***
QUILLION	- TIMOTHY	USD 30500	*** 0 ***
CUMMINGS	- PUALA	USD 41000	*** 1500 ***

**SUSPEX01 - SUSPEND IDENTICAL SUPPRESS-Statement (in Verbindung mit den Parametern IS, ES, ZP bei DISPLAY)**

```

** Example 'SUSPEX01': SUSPEND IDENTICAL SUPPRESS (in conjunction with
**                      parameters IS, ES, ZP in DISPLAY)
*****
DEFINE DATA LOCAL
1 EMPLOY-VIEW VIEW OF EMPLOYEES
  2 PERSONNEL-ID
  2 FIRST-NAME
  2 NAME
  2 CITY
1 VEH-VIEW VIEW OF VEHICLES
  2 PERSONNEL-ID
  2 MAKE
END-DEFINE
*
LIMIT 15
RD. READ EMPLOY-VIEW BY NAME STARTING FROM 'JONES'
  SUSPEND IDENTICAL SUPPRESS
  FD. FIND VEH-VIEW WITH PERSONNEL-ID = PERSONNEL-ID (RD.)
  IF NO RECORDS FOUND
    MOVE '*****' TO MAKE
  END-NOREC
  DISPLAY NOTITLE (ES=OFF IS=ON ZP=ON AL=15)
    NAME (RD.)
    FIRST-NAME (RD.)
    MAKE (FD.) (IS=OFF)
  END-FIND
END-READ
END

```

## Ausgabe des Programms SUSPEX01:

NAME	FIRST-NAME	MAKE
JONES	VIRGINIA	CHRYSLER
JONES	MARSHA	CHRYSLER
JONES	ROBERT	CHRYSLER
JONES	LILLY	GENERAL MOTORS
		FORD
		MG
JONES	EDWARD	GENERAL MOTORS
JONES	MARTHA	GENERAL MOTORS
JONES	LAUREL	GENERAL MOTORS

```
JONES      KEVIN      DATSUN
JONES      GREGORY   FORD
JOPER      MANFRED   *****
JOUSSELIN  DANIEL    RENAULT
JUBE       GABRIEL   *****
JUNG       ERNST     *****
JUNKIN     JEREMY    *****
KAISER     REINER    *****
```

**SUSPEX02 - SUSPEND IDENTICAL SUPPRESS-Statement (in Verbindung mit den Parametern IS, ES, ZP in DISPLAY). Identisch mit SUSPEX01, aber mit IS=OFF.**

```
** Example 'SUSPEX02': SUSPEND IDENTICAL SUPPRESS (in conjunction with
**                      parameters IS, ES, ZP in DISPLAY)
**                      Identical to SUSPEX01, but with IS=OFF.
*****
DEFINE DATA LOCAL
1 EMPLOY-VIEW VIEW OF EMPLOYEES
  2 PERSONNEL-ID
  2 FIRST-NAME
  2 NAME
  2 CITY
1 VEH-VIEW VIEW OF VEHICLES
  2 PERSONNEL-ID
  2 MAKE
END-DEFINE
*
LIMIT 15
RD. READ EMPLOY-VIEW BY NAME STARTING FROM 'JONES'
  SUSPEND IDENTICAL SUPPRESS
  FD. FIND VEH-VIEW WITH PERSONNEL-ID = PERSONNEL-ID (RD.)
    IF NO RECORDS FOUND
      MOVE '*****' TO MAKE
    END-NOREC
  DISPLAY NOTITLE (ES=OFF IS=OFF ZP=ON AL=15)
    NAME          (RD.)
    FIRST-NAME    (RD.)
    MAKE          (FD.) (IS=OFF)
  END-FIND
END-READ
END
```

Ausgabe des Programms SUSPEX02:

```
-----
NAME          FIRST-NAME      MAKE
-----
JONES         VIRGINIA      CHRYSLER
JONES         MARSHA       CHRYSLER
JONES         MARSHA       CHRYSLER
JONES         ROBERT       GENERAL MOTORS
JONES         LILLY        FORD
JONES         LILLY        MG
JONES         EDWARD       GENERAL MOTORS
JONES         MARTHA       GENERAL MOTORS
JONES         LAUREL       GENERAL MOTORS
JONES         KEVIN        DATSUN
JONES         GREGORY      FORD
JOPER         MANFRED      *****
JOUSSELIN     DANIEL       RENAULT
```

```
JUBE           GABRIEL           *****
JUNG           ERNST             *****
JUNKIN        JEREMY             *****
KAISER        REINER            *****
```

## COMPRX03 - COMPRESS-Statement (in Verbindung mit LC und TC)

```
** Example 'COMPRX03': COMPRESS (using parameters LC and TC)
*****
DEFINE DATA LOCAL
1 EMPLOY-VIEW VIEW OF EMPLOYEES
  2 CITY
  2 SALARY      (1)
  2 CURR-CODE  (1)
  2 LEAVE-DUE
  2 NAME
  2 FIRST-NAME
  2 JOB-TITLE
*
1 #SALARY      (N9)
1 #FULL-SALARY (A25)
1 #VACATION    (A11)
END-DEFINE
*
READ (3) EMPLOY-VIEW WITH CITY = 'BOSTON'
  MOVE SALARY(1) TO #SALARY
  COMPRESS 'SALARY : ' CURR-CODE(1) #SALARY INTO #FULL-SALARY
  COMPRESS 'VACATION:' LEAVE-DUE      INTO #VACATION
  /*
  DISPLAY NOTITLE NAME FIRST-NAME
           'JOB DESCRIPTION' JOB-TITLE (LC='JOB      : ') /
           '/'              #FULL-SALARY /
           '/'              #VACATION (TC='DAYS')

  SKIP 1
END-READ
END
```

Ausgabe des Programms COMPRX03:

NAME	FIRST-NAME	JOB DESCRIPTION
SHAW	LESLIE	JOB      : SECRETARY SALARY   : USD 18000 VACATION: 2DAYS
STANWOOD	VERNON	JOB      : PROGRAMMER SALARY   : USD 31000 VACATION: 1DAYS
CREMER	WALT	JOB      : SECRETARY SALARY   : USD 20000 VACATION: 3DAYS

## Editiermasken

Auf folgende Beispiele wird im Abschnitt *Editiermasken – der EM-Parameter* verwiesen.

### EDITMX03 - Editiermaske (unterschiedliche EM-Angabe bei alphanumerischen Feldern)

```

** Example 'EDITMX03': Edit mask (different EM for alpha-numeric fields)
*****
DEFINE DATA LOCAL
1 EMPLOY-VIEW VIEW OF EMPLOYEES
  2 PERSONNEL-ID
  2 FIRST-NAME
  2 NAME
  2 CITY
  2 SALARY(1)
END-DEFINE
*
LIMIT 3
READ EMPLOY-VIEW BY PERSONNEL-ID FROM '20018000'
      WHERE SALARY(1) = 28000 THRU 30000
      DISPLAY 'N A M E' NAME (EM=X^X^X^X^X^X^X^X^X^X^X^X^X^X^X^X^X) /
      'NAME HEX' NAME (EM=H^H^H^H^H^H^H^H^H^H^H^H^H^H^H^H)
      FIRST-NAME (EM=' - 'X(15)*)
      CITY (EM=X..X(10))

      SKIP 1
END-READ
END
    
```

Abgabe des Programms EDITMX03:

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N A M E	FIRST-NAME	CITY
NAME HEX		
L O R I E	- JEAN-PAUL	* C..LEVELAND
D3 D6 D9 C9 C5 40 40 40 40 40 40		
H A L L	- ARTHUR	* A..NN ARBER
C8 C1 D3 D3 40 40 40 40 40 40 40		
V A S W A N I	- TOMMIE	* M..ONTERREY
E5 C1 E2 E6 C1 D5 C9 40 40 40 40		

### EDITMX04 - Editiermaske (unterschiedliche EM-Angaben bei numerischen Feldern)

```

** Example 'EDITMX04': Edit mask (different EM for numeric fields)
*****
DEFINE DATA LOCAL
1 EMPLOY-VIEW VIEW OF EMPLOYEES
  2 PERSONNEL-ID
  2 FIRST-NAME
  2 NAME
  2 SALARY (1)
  2 BONUS (1,1)
  2 LEAVE-DUE
END-DEFINE
*
LIMIT 2
READ EMPLOY-VIEW BY PERSONNEL-ID = '20018000'
      WHERE SALARY(1) = 28000 THRU 30000
      DISPLAY (SF=4)
      'N A M E' NAME
      'SALARY' SALARY(1) (EM=*USD^ZZZ,999)
      'BONUS (ZZ)' BONUS(1,1) (EM=S*ZZZ,999) /
    
```

```
'BONUS (Z9)' BONUS(1,1) (EM=SZ99,999+) /
'->' '=' BONUS(1,1) (EM=-999,999)
'VAC/DUE' LEAVE-DUE (EM=+999)

SKIP 1
END-READ
END
```

Ausgabe des Programms EDITMX04:

```
Page      1                                04-12-13  14:27:43

      N A M E          SALARY          BONUS (ZZ)          VAC
                        BONUS (Z9)          DUE
                        BONUS
-----
LORIE          USD *28,000      +**4,000          +13
                        + 04,000+
                        -> 004,000

HALL           USD *30,000      +**5,000          +14
                        + 05,000+
                        -> 005,000
```

**EDITMX05 - Editiermaske (EM-Angaben für Datums- und Uhrzeit-Systemvariablen)**

```
** Example 'EDITMX05': Edit mask (EM for date and time system variables)
*****
WRITE NOTITLE //
' DATE INTERNAL : ' *DATX (DF=L) /
'                : ' *DATX (EM=N(9)' 'ZW.'WEEK 'YYYY) /
'                : ' *DATX (EM=ZZJ' .DAY 'YYYY) /
'   ROMAN       : ' *DATX (EM=R) /
'   AMERICAN    : ' *DATX (EM=MM/DD/YYYY)      12X 'OR ' *DAT4U /
'   JULIAN      : ' *DATX (EM=YYYYJJJ)        15X 'OR ' *DAT4J /
'   GREGORIAN   : ' *DATX (EM=ZD.' 'L(10)' 'YYYY) 5X 'OR ' *DATG ///
' TIME INTERNAL : ' *TIMX                      14X 'OR ' *TIME /
'                : ' *TIMX (EM=HH.II.SS.T) /
'                : ' *TIMX (EM=HH.II.SS' 'AP) /
'                : ' *TIMX (EM=HH)

END
```

Ausgabe des Programms EDITMX05:

```
DATE INTERNAL : 2004-12-13
                : Monday 51.WEEK 2004
                : 348.DAY 2004
   ROMAN       : MMIV
   AMERICAN    : 12/13/2004      OR   12/13/2004
   JULIAN      : 2004348         OR   2004348
   GREGORIAN   : 13.December2004 OR   13December 2004

TIME INTERNAL : 14:28:49          OR   14:28:49.1
                : 14.28.49.1
                : 02.28.49 PM
                : 14
```

# DISPLAY VERT mit WRITE-Statement

## WRITEX10 - WRITE-Statement (mit nT, T\*field und P\*field)

```

** Example 'WRITEX10': WRITE (with nT, T*field and P*field)
*****
DEFINE DATA LOCAL
1 EMPLOY-VIEW VIEW OF EMPLOYEES
  2 JOB-TITLE
  2 NAME
  2 SALARY (1)
  2 BONUS (1,1)
END-DEFINE
*
READ (3) EMPLOY-VIEW WITH JOB-TITLE FROM 'SALES PERSON'
  DISPLAY NOTITLE NAME 30T JOB-TITLE
    VERT AS 'SALARY/BONUS' SALARY(1) BONUS(1,1)
  AT BREAK OF JOB-TITLE
    WRITE 20T 'AVERAGE' T*JOB-TITLE OLD(JOB-TITLE) (AL=15)
      '(SAL)' P*SALARY AVER(SALARY(1)) /
      46T '(BON)' P*BONUS AVER(BONUS(1,1)) /
  END-BREAK
  SKIP 1
END-READ
END

```

Ausgabe des Programms WRITEX10:

NAME	CURRENT POSITION	SALARY BONUS
SAMUELSON	SALES PERSON	32000 6000
PAPAYANOPOULOS	SALES PERSON	34000 7000
HELL	SALES PERSON	38000 9000
AVERAGE	SALES PERSON	(SAL) 34666 (BON) 7333

## AT BREAK-Statement

Auf das folgende Beispiel wird im Abschnitt *Gruppenwechsel* verwiesen.

### ATBREX06 - AT BREAK OF-Statement (zum Vergleichen von NMIN, NAVER, NCOUNT mit MIN, AVER, COUNT)

```

** Example 'ATBREX06': AT BREAK OF (comparing NMIN, NAVER, NCOUNT with
**                               MIN, AVER, COUNT)
*****
DEFINE DATA LOCAL
1 EMPLOY-VIEW VIEW OF EMPLOYEES
  2 CITY
  2 SALARY (1:2)
END-DEFINE

```

```

*
WRITE TITLE '-- SALARY STATISTICS BY CITY --' /
*
READ (2) EMPLOY-VIEW WITH CITY = 'NEW YORK'
  DISPLAY CITY 'SALARY (1)' SALARY(1) 15X 'SALARY (2)' SALARY(2)
  AT BREAK OF CITY
  WRITE /
    14T 'S A L A R Y (1)'          39T 'S A L A R Y (2)'          /
    13T '- MIN:' MIN(SALARY(1))    38T '- MIN:' MIN(SALARY(2))    /
    13T '- AVER:' AVER(SALARY(1))  38T '- AVER:' AVER(SALARY(2))  /
    16T COUNT(SALARY(1)) 'RECORDS' 41T COUNT(SALARY(2)) 'RECORDS' //
    13T '- NMIN:' NMIN(SALARY(1)) 38T '- NMIN:' NMIN(SALARY(2)) /
    13T '- NAVER:' NAVER(SALARY(1)) 38T '- NAVER:' NAVER(SALARY(2)) /
    16T NCOUNT(SALARY(1)) 'RECORDS' 41T NCOUNT(SALARY(2)) 'RECORDS'
  END-BREAK
END-READ
END

```

Ausgabe des Programms ATBEX06:

```

-- SALARY STATISTICS BY CITY --

-----
CITY          SALARY (1)          SALARY (2)
-----
NEW YORK          17000          16100
NEW YORK          38000          34900

          S A L A R Y (1)          S A L A R Y (2)
-   MIN:          17000          -   MIN:          16100
-   AVER:          27500          -   AVER:          25500
          2 RECORDS          2 RECORDS

-   NMIN:          17000          -   NMIN:          16100
-   NAVER:          27500          -   NAVER:          25500
          2 RECORDS          2 RECORDS

```

## Statements COMPUTE, MOVE und COMPRESS

Auf die folgenden Beispiele wird im Abschnitt *Datenberechnungen* verwiesen.

### WRITEX11 – WRITE-Statement (mit nX, n/n und COMPRESS)

```

** Example 'WRITEX11': WRITE (with nX, n/n and COMPRESS)
*****
DEFINE DATA LOCAL
1 EMPLOY-VIEW VIEW OF EMPLOYEES
  2 PERSONNEL-ID
  2 SALARY (1)
  2 FIRST-NAME
  2 NAME
  2 CITY
  2 ZIP
  2 CURR-CODE (1)
  2 JOB-TITLE
  2 LEAVE-DUE
  2 ADDRESS-LINE (1)
*
1 #SALARY (A8)
1 #FULL-NAME (A25)

```

```

1 #FULL-CITY      (A25)
1 #FULL-SALARY   (A25)
1 #VACATION      (A16)
END-DEFINE
*
READ (3) EMPLOY-VIEW LOGICAL BY PERSONNEL-ID = '2001800'
  MOVE SALARY(1) TO #SALARY
  COMPRESS FIRST-NAME NAME                INTO #FULL-NAME
  COMPRESS ZIP      CITY                  INTO #FULL-CITY
  COMPRESS 'SALARY  :' CURR-CODE(1) #SALARY INTO #FULL-SALARY
  COMPRESS 'VACATION:' LEAVE-DUE  'DAYS'  INTO #VACATION
/*
  DISPLAY NOTITLE 'NAME AND ADDRESS' NAME
                5X 'PERS-NO.'      PERSONNEL-ID
                3X 'JOB TITLE'     JOB-TITLE (LC='JOB      : ')
  WRITE  1/5 #FULL-NAME      1/37 #FULL-SALARY
        2/5 ADDRESS-LINE(1) 2/37 #VACATION
        3/5 #FULL-CITY
  SKIP 1
END-READ
END

```

Ausgabe des Programms WRITEX11:

NAME AND ADDRESS	PERS-NO.	JOB TITLE
FARRIS JACKIE FARRIS 918 ELM STREET 32306 TALLAHASSEE	20018000	JOB      : PROGRAMMER SALARY   : USD 30500 VACATION: 10 DAY
EVANS JO EVANS 1058 REDSTONE LANE 68508 LINCOLN	20018100	JOB      : PROGRAMMER SALARY   : USD 31000 VACATION: 11 DAY
HERZOG JOHN HERZOG 255 ZANG STREET #253 27514 CHAPEL HILL	20018200	JOB      : PROGRAMMER SALARY   : USD 31500 VACATION: 12 DAY

### IFX03 - IF-Statement

```

** Example 'IFX03': IF
*****
DEFINE DATA LOCAL
1 EMPLOY-VIEW VIEW OF EMPLOYEES
  2 NAME
  2 CITY
  2 BONUS (1,1)
  2 SALARY (1)
*
1 #INCOME (N9)
1 #TEXT   (A26)
END-DEFINE
*
WRITE TITLE '-- DISTRIBUTION OF CATALOGS I AND II --' /
*
READ (3) EMPLOY-VIEW BY CITY = 'SAN FRANCISCO'
  COMPUTE #INCOME = BONUS(1,1) + SALARY(1)
/*

```

```

IF #INCOME > 40000
  MOVE 'CATALOGS I AND II' TO #TEXT
ELSE
  MOVE 'CATALOG I'          TO #TEXT
END-IF
/*
DISPLAY NAME 5X 'SALARY' SALARY(1) / BONUS(1,1)
WRITE T*SALARY '-'(10) /
      16X 'INCOME:' T*SALARY #INCOME 3X #TEXT /
      16X '='(19)
SKIP 1
END-READ
END

```

## Ausgabe des Programms IFX03:

```

-- DISTRIBUTION OF CATALOGS I AND II --

      NAME                SALARY
                        BONUS
-----
COLVILLE JR                56000
                        0
                        -----
                        INCOME:    56000   CATALOGS I AND II
                        =====

RICHMOND                    9150
                        0
                        -----
                        INCOME:    9150   CATALOG I
                        =====

MONKTON                     13500
                        600
                        -----
                        INCOME:    14100  CATALOG I
                        =====

```

**COMPRX03 - COMPRESS-Statement (mit Parametern LC and TC)**

```

** Example 'COMPRX03': COMPRESS (using parameters LC and TC)
*****
DEFINE DATA LOCAL
1 EMPLOY-VIEW VIEW OF EMPLOYEES
  2 CITY
  2 SALARY      (1)
  2 CURR-CODE  (1)
  2 LEAVE-DUE
  2 NAME
  2 FIRST-NAME
  2 JOB-TITLE
*
1 #SALARY      (N9)
1 #FULL-SALARY (A25)
1 #VACATION   (A11)
END-DEFINE
*
READ (3) EMPLOY-VIEW WITH CITY = 'BOSTON'
  MOVE SALARY(1) TO #SALARY
  COMPRESS 'SALARY  :' CURR-CODE(1) #SALARY INTO #FULL-SALARY

```

```

COMPRESS 'VACATION:' LEAVE-DUE          INTO #VACATION
/*
DISPLAY NOTITLE NAME FIRST-NAME
      'JOB DESCRIPTION' JOB-TITLE (LC='JOB      : ' ) /
      '/'                #FULL-SALARY                /
      '/'                #VACATION (TC='DAYS' )
SKIP 1
END-READ
END

```

Ausgabe des Programms COMPRX03:

NAME	FIRST-NAME	JOB DESCRIPTION
SHAW	LESLIE	JOB      : SECRETARY SALARY   : USD 18000 VACATION: 2DAYS
STANWOOD	VERNON	JOB      : PROGRAMMER SALARY   : USD 31000 VACATION: 1DAYS
CREMER	WALT	JOB      : SECRETARY SALARY   : USD 20000 VACATION: 3DAYS

## Systemvariablen

Auf die folgenden Beispiele wird im Abschnitt *Systemvariablen und Systemfunktionen* verwiesen.

### EDITMX05 – Editiermaske (EM bei Datums- und Uhrzeit-Systemvariablen)

```

** Example 'EDITMX05': Edit mask (EM for date and time system variables)
*****
WRITE NOTITLE //
  'DATE INTERNAL : ' *DATX (DF=L) /
  '              : ' *DATX (EM=N(9)' 'ZW.'WEEK 'YYYY) /
  '              : ' *DATX (EM=ZZJ'.DAY 'YYYY) /
  '  ROMAN       : ' *DATX (EM=R) /
  '  AMERICAN   : ' *DATX (EM=MM/DD/YYYY)      12X 'OR ' *DAT4U /
  '  JULIAN     : ' *DATX (EM=YYYYJJJ)        15X 'OR ' *DAT4J /
  '  GREGORIAN : ' *DATX (EM=ZD.' 'L(10)' 'YYYY) 5X 'OR ' *DATG ///
  'TIME INTERNAL : ' *TIMX                    14X 'OR ' *TIME /
  '              : ' *TIMX (EM=HH.II.SS.T) /
  '              : ' *TIMX (EM=HH.II.SS' 'AP) /
  '              : ' *TIMX (EM=HH)
END

```

Ausgabe des Programms EDITMX05:

```

DATE INTERNAL : 2004-12-13
              : Monday 51.WEEK 2004
              : 348.DAY 2004
ROMAN        : MMIV
AMERICAN     : 12/13/2004      OR  12/13/2004
JULIAN       : 2004348         OR  2004348
GREGORIAN    : 13.December2004 OR  13December 2004

```

```

TIME INTERNAL : 14:36:58          OR   14:36:58.8
              : 14.36.58.8
              : 02.36.58 PM
              : 14

```

### READX04 - READ-Statement (in Verbindung mit FIND und den Systemvariablen \*NUMBER und \*COUNTER)

```

** Example 'READX04': READ (in combination with FIND and the system
**                      variables *NUMBER and *COUNTER)
*****
DEFINE DATA LOCAL
1 EMPLOY-VIEW VIEW OF EMPLOYEES
  2 PERSONNEL-ID
  2 NAME
  2 FIRST-NAME
1 VEHIC-VIEW VIEW OF VEHICLES
  2 PERSONNEL-ID
  2 MAKE
END-DEFINE
*
LIMIT 10
RD. READ EMPLOY-VIEW BY NAME STARTING FROM 'JONES'
  FD. FIND VEHIC-VIEW WITH PERSONNEL-ID = PERSONNEL-ID (RD.)
    IF NO RECORDS FOUND
      ENTER
    END-NOREC
  /*
  DISPLAY NOTITLE
    *COUNTER (RD.)(NL=8) NAME           (AL=15) FIRST-NAME (AL=10)
    *NUMBER  (FD.)(NL=8) *COUNTER (FD.)(NL=8) MAKE
  END-FIND
END-READ
END

```

Ausgabe des Programms READX04:

CNT	NAME	FIRST-NAME	NMBR	CNT	MAKE
1	JONES	VIRGINIA	1	1	CHRYSLER
2	JONES	MARSHA	2	1	CHRYSLER
2	JONES	MARSHA	2	2	CHRYSLER
3	JONES	ROBERT	1	1	GENERAL MOTORS
4	JONES	LILLY	2	1	FORD
4	JONES	LILLY	2	2	MG
5	JONES	EDWARD	1	1	GENERAL MOTORS
6	JONES	MARTHA	1	1	GENERAL MOTORS
7	JONES	LAUREL	1	1	GENERAL MOTORS
8	JONES	KEVIN	1	1	DATSUN
9	JONES	GREGORY	1	1	FORD
10	JOPER	MANFRED	0	0	

**WTITLX01 – WRITE TITLE-Statement (mit \*PAGE-NUMBER)**

```

** Example 'WTITLX01': WRITE TITLE (with *PAGE-NUMBER)
*****
DEFINE DATA LOCAL
1 VEHIC-VIEW VIEW OF VEHICLES
  2 MAKE
  2 YEAR
  2 MAINT-COST (1)
END-DEFINE
*
LIMIT 5
*
READ VEHIC-VIEW
END-ALL
SORT BY YEAR USING MAKE MAINT-COST (1)
  DISPLAY NOTITLE YEAR MAKE MAINT-COST (1)
  AT BREAK OF YEAR
    MOVE 1 TO *PAGE-NUMBER
    NEWPAGE
  END-BREAK
/*
  WRITE TITLE LEFT JUSTIFIED
    'YEAR:' YEAR 15X 'PAGE' *PAGE-NUMBER
END-SORT
END

```

Ausgabe des Programms WTITLX01:

```

YEAR:  1980                PAGE      1
YEAR      MAKE              MAINT-COST
-----  -----
1980 RENAULT                20000
1980 RENAULT                20000
1980 PEUGEOT                20000

```

**Systemfunktionen**

Auf die folgenden Beispiele wird im Abschnitt *Systemvariablen und Systemfunktionen* verwiesen.

**ATBREX06 - AT BREAK OF-Statement (zum Vergleichen von NMIN, NAVER, NCOUNT mit MIN, AVER, COUNT)**

```

** Example 'ATBREX06': AT BREAK OF (comparing NMIN, NAVER, NCOUNT with
**                               MIN, AVER, COUNT)
*****
DEFINE DATA LOCAL
1 EMPLOY-VIEW VIEW OF EMPLOYEES
  2 CITY
  2 SALARY (1:2)
END-DEFINE
*
WRITE TITLE '-- SALARY STATISTICS BY CITY --' /
*
READ (2) EMPLOY-VIEW WITH CITY = 'NEW YORK'
  DISPLAY CITY 'SALARY (1)' SALARY(1) 15X 'SALARY (2)' SALARY(2)
  AT BREAK OF CITY
    WRITE /
      14T 'S A L A R Y   (1)'           39T 'S A L A R Y   (2)'           /

```

```

13T '- MIN:' MIN(SALARY(1)) 38T '- MIN:' MIN(SALARY(2)) /
13T '- AVER:' AVER(SALARY(1)) 38T '- AVER:' AVER(SALARY(2)) /
16T COUNT(SALARY(1)) 'RECORDS' 41T COUNT(SALARY(2)) 'RECORDS' //
13T '- NMIN:' NMIN(SALARY(1)) 38T '- NMIN:' NMIN(SALARY(2)) /
13T '- NAVER:' NAVER(SALARY(1)) 38T '- NAVER:' NAVER(SALARY(2)) /
16T NCOUNT(SALARY(1)) 'RECORDS' 41T NCOUNT(SALARY(2)) 'RECORDS'
END-BREAK
END-READ
END

```

Ausgabe des Programms ATBREX06:

```

-- SALARY STATISTICS BY CITY --

```

CITY	SALARY (1)	SALARY (2)
NEW YORK	17000	16100
NEW YORK	38000	34900

  

S A L A R Y (1)		S A L A R Y (2)	
- MIN:	17000	- MIN:	16100
- AVER:	27500	- AVER:	25500
	2 RECORDS		2 RECORDS
- NMIN:	17000	- NMIN:	16100
- NAVER:	27500	- NAVER:	25500
	2 RECORDS		2 RECORDS

**ATENPX01 - AT END OF PAGE-Statement (mit der durch GIVE SYSTEM FUNCTIONS in DISPLAY verfügbaren Systemfunktion)**

```

** Example 'ATENPX01': AT END OF PAGE (with system function available
** via GIVE SYSTEM FUNCTIONS in DISPLAY)
*****
DEFINE DATA LOCAL
1 EMPLOY-VIEW VIEW OF EMPLOYEES
  2 PERSONNEL-ID
  2 NAME
  2 JOB-TITLE
  2 SALARY (1)
END-DEFINE
*
READ (10) EMPLOY-VIEW BY PERSONNEL-ID = '20017000'
  DISPLAY NOTITLE GIVE SYSTEM FUNCTIONS
  NAME JOB-TITLE 'SALARY' SALARY(1)
/*
  AT END OF PAGE
  WRITE / 24T 'AVERAGE SALARY: ...' AVER(SALARY(1))
  END-ENDPAGE
END-READ
END

```

Ausgabe des Programms ATENPX01:

NAME	CURRENT POSITION	SALARY
CREMER	ANALYST	34000
MARKUSH	TRAINEE	22000

GEE	MANAGER	39500
KUNEY	DBA	40200
NEEDHAM	PROGRAMMER	32500
JACKSON	PROGRAMMER	33000
PIETSCH	SECRETARY	22000
PAUL	SECRETARY	23000
HERZOG	MANAGER	48500
DEKKER	DBA	48000
	AVERAGE SALARY: ...	34270