

# Useful Things to Know About CA Culprit

By JDAGPC  
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## Abstract

- In this session we will cover CA Culprit basics through to more advanced concepts
- We will not cover all the options available on the parameters we will investigate
- We will make you aware of many key features by teaching through example
- There is homework for this session on CA Communities that will help you to become proficient in CA Culprit

## Biography

- Retired after 42 years in computing
- 30 years specializing in CA IDMS— pre/post sales support for Cullinet (four and a half years) and Allen Systems Group (one year in Singapore)
- Roles— DBA, application developer, security specialist, performance and tuning specialist, IDD customisation and reporting, IDMS/SQL functions and procedures
- Training in all aspects of using IDMS – DBA's and developers – wrote courseware for developers
- Where— Canada, Singapore, England, Malaysia, Thailand, Philippines and Australia

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3

## Road Map

- Simple Report
  - Flat File
    - Basic CA Culprit Parameters
  - Database
    - PATH Parameter
- Execution Phases and Listings
- Record Selection
  - SELECT / BYPASS
  - By KEY
  - By INDEX
- Sorting and Totalling
- Output Options

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4



# Simple Report – Flat File

- CA Culprit Parameters
- Result
- Discussion

# Simple Report – Flat File

```

BROWSE      JDAGPC.EMPFILE                               Line 00000000 Col 001 080
Command ==>                                         Scroll ==> CSR
***** Top of Data *****
ALAN      DONOVAN      0366BLUE SKIES      SUNSHINE SUPERVISOR 19811010..&
BETH      CLOUD        0371BLUE SKIES      CUMULUS CARETAKER  19770304.*2
BETSY     ZEDI          0476PUBLIC RELATIONS PR WRITER           19760223...
BRIAN     NICEMAN       0101ACCOUNTING AND PAYROAP CLERK           19800506...
BURT      LANCHESTER    0301BRAINSTORMING   RAINMAKER           19850203.Y&
C.        BREEZE          0467BRAINSTORMING   KEEPER OF THE WINDS 19790602...
CAROL     MCDUGALL           0127PUBLIC RELATIONS PASTE-UP ARTIST  19800607...
CAROLYN   CROW                0334BRAINSTORMING   RAINDANCE CONSULTANT19790617..&
CHARLES   BOWER              0119PUBLIC RELATIONS PHOTOGRAPHER       19771214..&
CYNTHIA   JOHNSON            0051PERSONNEL        PERSONNEL CLERK     19770323..&
DANIEL    MOON              0321BLUE SKIES       MGR BLUE SKIES      19811003...
DORIS     KING                0106ACCOUNTING AND PAYROAR CLERK           19800816..&
DOUGLAS   KAHALLY             0049COMPUTER OPERATIONS COMPUTER OPERATOR 19790929...
EDWARD    HUTTON              0100ACCOUNTING AND PAYROFINANCIAL ANALYST 19770907.k.
ELEANOR   PEOPLES             0013PERSONNEL        MGR PERSONNEL       19810102.x.
```



INPUT FILE DESCRIPTIONS

Flat File Layout

In Homework Resources see culprit.EMPFILE

SEQUENTIAL FILE DESCRIPTION - EMPLOYEE FILE

Record Length: 90  
Block Length: n/a  
Record Type: Fixed  
File Type: Physical Sequential  
Device Type: 3350

\*\*\*DD=EMPFILE\*\*\*

| FIELD NAME  | START POSITION | FIELD LENGTH | DATA TYPE | DECIMAL POSITIONS |
|-------------|----------------|--------------|-----------|-------------------|
| EMP-NAME    | 1              | 25           | A/N       |                   |
| EMP-FNAME   | 1              | 10           | A/N       |                   |
| EMP-LNAME   | 11             | 15           | A/N       |                   |
| EMP-ID      | 26             | 4            | Zoned     | 0                 |
| DEPT-NAME   | 30             | 20           | A/N       | -                 |
| JOB-TITLE   | 50             | 20           | A/N       | -                 |
| START-DATE  | 70             | 8            | Zoned     | 0                 |
| START-YEAR  | 72             | 2            | A/N       |                   |
| START-MONTH | 74             | 2            | A/N       |                   |
| START-DAY   | 76             | 2            | A/N       |                   |
| SALARY      | 78             | 5            | Packed    | 2                 |

A/N = Alphanumeric

Start in 70 for 4

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7

Simple Report – Parameters

PARAM=LIST

\$=====\*

\$ Exccercise 1: A simple listing \*

\$ Report No: 11 \*

\$=====\*

\$ Input from extracted EMPDEMO Employee Database \*

\$=====\*

IN 90 F PS DD=EMPFILE

REC EMP-LNAME 11 15 'Employee' 'Last Name'

REC DEPT-NAME 30 20 'Department'

REC SALARY 78 5 3 DP=2 'Annual' 'Salary'

\$

\$=====\*

\$ Report 11 ----> OUTPUT + SEQUENCING PARMS \*

\$=====\*

11OUT 80

11SORT DEPT-NAME 0 EMP-LNAME

\$=====\*

\$ REPORT TITLE

11T Employee Listing

\$=====\*

11D1\*010 EMP-LNAME HR

11D1\*020 DEPT-NAME HR

11D1\*030 SALARY HR DP=2 SZ=12

\$=====\*

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8

# Simple Report

## Job Output

Display Filter View Print Options Help

```
SDSF JOB DATA SET DISPLAY - JOB JDAGPC$1 (JOB04487)      LINE 1-5 (5)
COMMAND INPUT ===)                                         SCROLL ===) CSR

NP  DDNAME  StepName ProcStep DSID  Owner   C Dest                      Rec-Cnt Page
   JESMSGLG JES2              2 JDAGPC  Y LOCAL                      18
   JESJCL   JES2              3 JDAGPC  Y LOCAL                      73
   JESYSMSG JES2              4 JDAGPC  Y LOCAL                     104
   SYSOUT   IDMSCULP IDMSCULP 102 JDAGPC  Y LOCAL                      44
   SYS004   IDMSCULP IDMSCULP 106 JDAGPC  Y LOCAL                     152
```

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9

# Simple Report

## Report Output

| REPORT NO. 11  | Employee Listing     | 08/10/07 PAGE 1  |
|--|----------------------|------------------|
| Employee<br>Last Name                                      | Department           | Annual<br>Salary |
| BLOOMER  | ACCOUNTING AND PAYRO | 15,000.00        |
| HUTTON   | ACCOUNTING AND PAYRO | 44,000.00        |
| JENSON   | ACCOUNTING AND PAYRO | 82,000.00        |
| KIMBALL  | ACCOUNTING AND PAYRO | 45,000.00        |
| KING   | ACCOUNTING AND PAYRO | 14,500.00        |
| NICEMAN  | ACCOUNTING AND PAYRO | 14,000.00        |
|  |                      | 214,500.00       |
| CLOUD  | BLUE SKIES           | 52,750.00        |
| DONOVAN  | BLUE SKIES           | 33,500.00        |
| MOON   | BLUE SKIES           | 72,000.00        |
|  |                      | 158,250.00       |
| <<<<<<<<<<<<<<<<<<<<<<<<<< snip >>>>>>>>>>>>>>>>>>>>>>>>>> |                      |                  |
| CLOTH  | THERMOREGULATION     | 38,000.00        |
| FINN   | THERMOREGULATION     | 45,000.00        |
| KASPAR   | THERMOREGULATION     | 31,000.00        |
| TIME   | THERMOREGULATION     | 33,000.00        |
| WILCO  | THERMOREGULATION     | 80,000.00        |
|  |                      | 227,000.00       |
|  |                      | 2,522,500.00     |

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10



# Simple Report – Flat File

```
PARAM=LIST
$=====
$ Exercise 1: A simple listing
$ Report No: 11
$=====
$ Input from extracted EMPDEMO Employee Database
$=====
IN 90 F PS DD=EMPFILE
REC EMP-LNAME 11 15 'Employee' 'Last Name'
REC DEPT-NAME 30 20 'Department'
REC SALARY 78 5 3 DP=2 'Annual' 'Salary'
$
$=====
$ Report 11 ----> OUTPUT + SEQUENCING PARMS
$=====
11OUT 80
11SORT DEPT-NAME 0 EMP-LNAME
$=====
$ REPORT TITLE
11T Employee Listing
$=====
11D1*010 EMP-LNAME HR
11D1*020 DEPT-NAME HR
11D1*030 SALARY HR DP=2 SZ=12
$=====
```

# CA Culprit – Parameter Types

## CULPRIT PARAMETER TYPES

|                               | Parameter  | Coding Form | Type | Usage                                  |
|-------------------------------|------------|-------------|------|--|
| PROFILE/INPUT DEFINITION      | PRO        |             |      | Sets system defaults for run           |
|                               | * IN       |             |      | Input file characteristics             |
|                               | * REC      |             |      | Field characteristics                  |
|                               | SEL/BYP    |             |      | Selection criteria                     |
| OUTPUT DEFINITION             | OUT        |             |      | Output characteristics                 |
|                               | SORT       |             |      | Report sequence/control breaks         |
|                               | 3 T        |             |      | Report title                           |
|                               | * 4 H      |             |      | Header line format                     |
|                               | 5 D        |             |      | Detail line format                     |
|                               | 6 S        |             |      | Total line format                      |
| PROCESS/WORK FIELD DEFINITION | 7 I        |             |      | Processing at input (extract) time     |
|                               | 8 B        |             |      | Processing at total time               |
|                               | OW         |             |      | User-developed work fields             |
| IDMS RETRIEVAL DEFINITION     | * DATABASE |             |      | Dictionary or database selection       |
|                               | PATH       |             |      | Route through the database             |
|                               | KEY        |             |      | Retrieval of specific records          |
|                               | KEYFILE    |             |      | File for retrieval of specific records |

\* Required parameters

# Simple Report – Database

- CA Culprit Parameters
- Result
- Discussion

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13

# Simple Report – Database

| RECORD:                                     | EMPLOYEE  | ID:   | 0415 | VER:   | 1            |
|---|-----------|-------|------|--------|--------------|
|   | DATA NAME | LEVEL | STRT | LENGTH | TYPE PICTURE |
| EMP-ID-0415                                 |           | 02    | 1    | 4      | DISPLAY 9(4) |
| EMP-NAME-0415                               |           | 02    | 5    | 25     | GROUP        |
| EMP-FIRST-NAME-0415                         |           | 03    | 5    | 10     | A/N X(10)    |
| EMP-LAST-NAME-0415                          |           | 03    | 15   | 15     | A/N X(15)    |
| EMP-ADDRESS-0415                            |           | 02    | 30   | 46     | GROUP        |
| EMP-STREET-0415                             |           | 03    | 30   | 20     | A/N X(20)    |
| EMP-CITY-0415                               |           | 03    | 50   | 15     | A/N X(15)    |
| EMP-STATE-0415                              |           | 03    | 65   | 2      | A/N X(2)     |
| <<<<<<<<<<<<<< snip >>>>>>>>>>>>>>>>>>>>>>> |           |       |      |        |              |
| START-DATE-0415                             |           | 02    | 97   | 8      | GROUP        |
| START-YEAR-0415                             |           | 03    | 97   | 4      | DISPLAY 9(4) |
| START-MONTH-0415                            |           | 03    | 101  | 2      | DISPLAY 9(2) |
| START-DAY-0415                              |           | 03    | 103  | 2      | DISPLAY 9(2) |
| TERMINATION-DATE-0415                       |           | 02    | 105  | 8      | GROUP        |
| TERMINATION-YEAR-0415                       |           | 03    | 105  | 4      | DISPLAY 9(4) |
| TERMINATION-MONTH-0415                      |           | 03    | 109  | 2      | DISPLAY 9(2) |
| TERMINATION-DAY-0415                        |           | 03    | 111  | 2      | DISPLAY 9(2) |
| BIRTH-DATE-0415                             |           | 02    | 113  | 8      | GROUP        |
| BIRTH-YEAR-0415                             |           | 03    | 113  | 4      | DISPLAY 9(4) |
| BIRTH-MONTH-0415                            |           | 03    | 117  | 2      | DISPLAY 9(2) |
| BIRTH-DAY-0415                              |           | 03    | 119  | 2      | DISPLAY 9(2) |

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14

## Simple Report – Parameters

```

55$=====
55$ Exercise 5: Creating a PATH Parameter
55$ Report No: 55
55$=====
GW0 WORK-ID
55$=====
55$ Input from EMPDEMO Employee Database
55$=====
IN DB SS=EMPSS01
PATHAA EMPLOYEE EMPOSITION JOB
55$=====
55OUT 80
55T Employee Detail List
55H10001 ' '
55$=====
55D1*030 EMP-NAME-0415 HH 'Employee' ' Name '
55D1*040 EMP-ID-0415 HH 'Employee' ' ID' FM '9999'
55D1*050 START-DATE-0415 HH 'Start' ' Date'
55D1*060 TITLE-0440 HH ' Job' 'Title'
55D1*070 SALARY-AMOUNT-0420 HH 'Salary'
55$=====
55$
55I IF EMP-ID-0415 EQ WORK-ID DROP
55$
55I M EMP-ID-0415 WORK-ID
55$

```

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15

## Simple Report – Output

|                          |                                  |                          |                      |                      |              |   |
|--------------------------|----------------------------------|--------------------------|----------------------|----------------------|--------------|---|
| REPORT NO.               | 55                               |                          | Employee Detail List | 08/10/07             | PAGE         | 1 |
|                          | Employee<br>Name                 | Employee<br>ID           | Start<br>Date        | Job<br>Title         | Salary       |   |
| KATHERINE                | O'HEARN                          | 0023                     | 19780504             | PROGRAMMER/ANALYST   | 42,500.00    |   |
| ROBBY                    | WILDER                           | 0472                     | 19790716             | DIR CORP CONFUSION   | 90,000.00    |   |
| BURT                     | LANCHESTER                       | 0301                     | 19750203             | RAINMAKER            | 54,500.00    |   |
| VLADIMIR                 | HEAROWITZ                        | 0027                     | 19810909             | PROGRAMMER/ANALYST   | 33,000.00    |   |
| THEMIS                   | PAPAZEUS                         | 0471                     | 19780907             | DIR WEATHER          | 100,000.00   |   |
| MORTE                    | BANK                             | 0007                     | 19780430             | MGR PUBLIC RELATIONS | 80,000.00    |   |
| CAROLYN                  | CROW                             | 0334                     | 19790617             | RAINDANCE CONSULTANT | 37,500.00    |   |
| CAROL                    | MCDUGALL                         | 0127                     | 19800607             | PASTE-UP ARTIST      | 18,000.00    |   |
| JULIE                    | JENSEN                           | 0019                     | 19820929             | PROGRAMMER/ANALYST   | 37,000.00    |   |
| ALAN                     | DONOVAN                          | 0366                     | 19811010             | SUNSHINE SUPERVISOR  | 33,500.00    |   |
| <<<<<<<<<<<<<<<<<<<<<<<< | sniip                            | >>>>>>>>>>>>>>>>>>>>>>>> |                      |                      |              |   |
| HERBERT                  | CRANE                            | 0004                     | 19770514             | MGR COMPUTER OPS     | 75,000.00    |   |
| PERCY                    | GRANGER                          | 0028                     | 19800527             | PROGRAMMER/ANALYST   | 34,500.00    |   |
| JANE                     | DOUGH                            | 0024                     | 19760808             | PROGRAMMER/ANALYST   | 33,000.00    |   |
| LARRY                    | LITERATA                         | 0035                     | 19800909             | DOCUMENTATION SPEC   | 37,500.00    |   |
| GEORGE                   | FONRAD                           | 0045                     | 19800414             | Data ENTRY CLERK     | 14,750.00    |   |
| DANIEL                   | MOON                             | 0321                     | 19780103             | MGR BLUE SKIES       | 72,000.00    |   |
|                          |                                  |                          |                      |                      | 2,522,500.00 |   |
| C750009                  | RECORDS WRITTEN FOR REPORT 55 -- |                          | 67                   |                      |              |   |

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16



## PATH Parameter for Database

### RULES FOR CODING PATH PARAMETERS

When accessing database records, moving from one record type to another requires a set relationship (known to the subschema) between the two record types. If more than one set relationship exists, the set to be used must be specified.

When defining a path through the database, the following rules apply:

- The entry record can be any record type, and the path can proceed from owner to member or from member to owner.
- When a record named on a path is retrieved using an owner to member traversal, the next record on the path must be related directly to the member record.
- When a record named on a path is retrieved using a member to owner traversal, the next record on the path can be related directly to the owner record or to any previous record on the path as long as neither that previous record, nor any intervening record, was retrieved using an owner to member relationship.

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17

## PATH Parameter for Database

### MULTIPLE PATH PARAMETERS

In the following path, not all employees will be retrieved. Only complete paths are returned to CULPRIT. Thus, employees who do not have a position will not be returned as no EMPOSITION record will be found.

```
PATHZZ DEPARTMENT EMPLOYEE EMPOSITION JOB
```

You will need an additional PATH parameter if you want all employees to be retrieved. With multiple PATH parameters, as soon as a path is complete it will be put in the input buffer and turned over to the first report for processing.

```
PATHYY DEPARTMENT EMPLOYEE  
PATHZZ DEPARTMENT EMPLOYEE EMPOSITION JOB
```

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18

## PATH Parameter for Database

### MULTIPLE PATH PARAMETERS (CONTINUED)

Each report in the run should test the PATH-ID field to determine which path is in the input buffer before processing that buffer.

In the code below, each report uses only the appropriate path.

```
PATHYY DEPARTMENT EMPLOYEE
PATHZZ DEPARTMENT EMPLOYEE EMPOSITION JOB
363 LISTING OF ALL EMPLOYEES
3651*010 EMP-NAME-0415
3651*020 START-DATE-0415
367010 IF PATH-ID NE 'YY' DROP
423 LISTING OF EMPLOYEES AND THEIR POSITIONS
4251*010 EMP-NAME-0415
```

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19

## Execution Phases + Listings

- CA Culprit “Steps”
- Listings
- Report Output

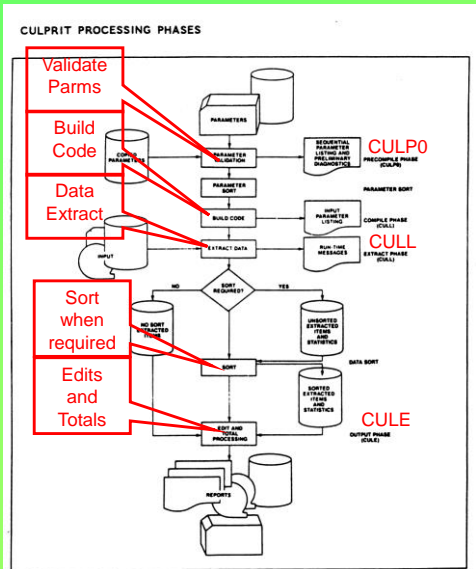
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20



# CA Culprit “Steps”



- Here are the details of all 5 “steps”
- There is “5 step” JCL
- Most use “1 step” JCL
  - executes a “mainline” that invokes all 5 steps (with sorts) internally

out CA Culprit

21

# Listings – Flat File

```
Display Filter View Print Options Help
-----
SDSF JOB DATA SET DISPLAY - JOB JDAGPC$1 (JOB04487)    LINE 1-5 (5)
COMMAND INPUT ==>                                     SCROLL ==>
CSR
NP  DDNAME      StepName ProcStep DSID Owner      C Dest                      Rec-Cnt
Page
   JESMSG LG   JES2          2 JDAGPC    Y LOCAL                      18
   JESJCL      JES2          3 JDAGPC    Y LOCAL                      73
   JESYSMSG    JES2          4 JDAGPC    Y LOCAL                     104
   SYSOUT      IDMSCULP      IDMSCULP  102 JDAGPC    Y LOCAL                      44
S   SYS004     IDMSCULP      IDMSCULP  106 JDAGPC    Y LOCAL                     152
```



# Listings

## Sequential Parameter Listing

```
***** TOP OF DATA *****
10/08/07                               SEQUENTIAL PARAMETER LISTING
00 ** SYSIN **                        PROFILE RELEASE=6 EX=E DS=E LP=50 PARM
C200138 INSTALLATION SECURITY OPTION IS YES
C200084 CULPRIT/DIRECTORY INTERFACE - IDMS 16.0 CULPRIT 16.0
C200175 DICTIONARY SECURITY OPTION IS OFF
C200186 AUTO-ATTRIBUTES IS OFF

PARAM=LIST
$=====
$ Exercise 1: A simple listing
$      Report No:  11
$=====
$      Input from extracted EMPD
$=====
IN 90 F      PS DD=EMPFILE
REC EMP-LNAME      11 15
REC DEPT-NAME      30 20
REC SALARY          78 5   3 D
$
$=====
$ Report 11 ----> OUTPUT + SEQUENCING P
$=====
11OUT 80
11SORT DEPT-NAME 0 EMP-LNAME
```

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23

# Listings

## Input Parameter Listing

```
08/10/07                               INPUT PARAMETER LISTING
*****
INPUT RECORD TYPE BLOCK FILE DESCRIPTION...
*****
INPUT 00090 F DD=EMPFILE
*****
REC START SIZE TYPE DP FIELD-NAME RECORD-NAME,LEVE
*****
REC 00030 00020 DEPT-NAME 'Department'
REC 00011 00015 EMP-LNAME 'Employee'
REC 00078 00005 3 2 SALARY 'Annual'
08/10/07                               INPUT PARAMETER LISTING
*****
OUTPUT RECORD BLOCK T/D FILE DESCRIPTION...
*****
11 OUT 00080
*****
SORT BREAK A/D SORT FIELD-NAME
*****
11 SORT 0 DEPT-NAME
EMP-LNAME
```

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24



# Listings - Flat File Input

## Input Parameter Listing + Run Time Messages

```
*****
11 3      Employee Listing
*****
EDIT      LINE CC COLUMN  VALUE OR FIELD-NAME AND EDIT OPTIONS...
*****
11 5      1      *010    EMP-LNAME HR
11 5      1      *020    DEPT-NAME HR
11 5      1      *030    SALARY    SZ=0012    DP=02      HR
C300106 EXTRACT WILL BE PERFORMED
C300119 PROFILE OPTION IN EFFECT: RELEASE = 6
08/10/07                                     RUN TIME MESSAGES

***** END OF FILE *****
56 INPUT RECORDS READ
```

# Listings - Database Input

## Input Parameter Listing + Run Time Messages

```
10/08/07                                     SEQUENTIAL PARAMETER LISTING
00 ** SYSIN **                             DATABASE DICTNAME=EDUDICT DBNAME=EMPDE
                                           PROFILE RELEASE=6 EX=E DS=E LP=50 PARM

C200138 INSTALLATION SECURITY OPTION IS YES
C200084 CULPRIT/DIRECTORY INTERFACE - IDMS 16.0 CULPRIT 16.0
C200175 DICTIONARY SECURITY OPTION IS OFF
C200186 AUTO-ATTRIBUTES IS OFF              PARAM=NOLIST

08/10/07                                     INPUT PARAMETER LISTING
C300106 EXTRACT WILL BE PERFORMED
C300119 PROFILE OPTION IN EFFECT: RELEASE = 6
08/10/07                                     RUN TIME MESSAGES

IDMS DATABASE EXTRACT STATISTICS
STRINGS RETURNED FOR PATH AA -              68
RECORD NAME      NUMBER READ
EMPLOYEE          56
EMPPOSITION       68
JOB               68
***** END OF FILE *****
68 INPUT RECORDS READ
```

## Record Selection

- SELECT / BYPASS
- KEY parameter
- KEYFILE parameter
- Database Access – INDEX Set option

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27

## Record Selection SELECT / BYPASS Parameter

### SELECT/BYPASS PARAMETER

- Optional
- Used when all of the reports in a single run of CULPRIT want the same subset of records from the input file
- Must follow the IN parameter to which it applies
- NOTE: SEL and BYP cannot be mixed for the same file.

```
SEL SALARY GT 50000

SEL START-YEAR EQ ('55', '65', '75') AND
DEPARTMENT-NAME EQ 'MANUFACTURING'

BYP SALARY NE (15000.00 TO 19999.99)
BYP EMP-LNAME NE ('SMITH' 'JONES' 'BROWN')

SEL START-YEAR LT '80' AND (START-MONTH EQ
'01' OR START-DAY E '01')
```

Note there is  
no "Line  
Number" – no  
ordering –  
implied AND

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28



# Record Selection

## KEY Parameter

### KEY PARAMETER

The KEY parameter limits access to the database by limiting retrieval of entry record occurrences. With the KEY parameter:

- Any number of KEY parameters can be included in a run.
- All KEY parameters must specify CALC-key, index-key, logical-record-key, or db-key values.
- Only one type of key can be used in a single run.
- A range of values can be used for index-key or logical-record-key values only.
- The key-field-name must be specified.

|        |                  |                   |
|--------|------------------|-------------------|
| PATHF1 | OFFICE           | EMPLOYEE          |
| KEY    | OFFICE-CODE-0450 | '123' \$OFFICE ID |

|        |  |
|--------|--|
| PATHF2 | EMPLOYEE (NO)                          |
| KEY    | EMP-ID-0415 (4444, 5555) \$EMPLOYEE ID |

# Record Selection

## KEYFILE Parameter

### KEYFILE PARAMETER

With the KEYFILE parameter, a sequential input file whose records contain either CALC-key, db-key, index-key, or logical-record-key values can be used to limit retrieval. Only one KEYFILE can be entered for each run.

You must identify the KEYFILE itself. You can also include REC parameters for the other fields within each KEYFILE record.

Here is CULPRIT code used to generate a report using a KEYFILE.

|          |                          |                   |
|----------|--------------------------|-------------------|
| IN 1500  | DB                       | SS=EMPSS001       |
| PATH01   | EMPLOYEE                 | EMPOSITION JOB    |
| REC      | PREVIOUS-STATUS(KEYFILE) | 44 2              |
| REC      | PREVIOUS-SALARY(KEYFILE) | 66 5 3            |
| KEYFILE  | 80                       | KF=3,4            |
| 8651*010 | EMP-ID-0415              |                   |
| 8651*020 | EMP-NAME-0415            |                   |
| 8651*030 | PREVIOUS-SALARY          | FM 'ZZZZ,ZZ9.99-' |
| 8651*040 | STATUS-0415              |                   |
| 8651*050 | PREVIOUS-STATUS          |                   |

## Record Selection Index Set Option

### ACCESSING MISCELLANEOUS IDMS RECORD STRUCTURES

#### INDEXED RECORDS

A record that is stored as an indexed record can be accessed by qualifying the record on the path with the index-set-name.

```
PATHAE EMPLOYEE(EMP-NAME-NDX) EMPOSITION JOB
```

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31

## Record Selection Multi-member Sets

### MULTIPLE-MEMBER SETS -- ALL-MEMBERS OPTION

When a set relationship exists with more than one member record type, a single PATH parameter can request that either all members or one member is accessed. To access data from more than one member record type, the PATH parameter must contain the ALL-MEMBERS option, and the SEL/BYP or extract logic must control processing based on the value of REC-NAME, which is in the overhead section of the input buffer. The following applies to the ALL-MEMBERS option:

- ALL-MEMBERS cannot be the only entry on the path.
- ALL-MEMBERS cannot be used when the path contains a logical record.
- ALL-MEMBERS must be the last entry on the path.
- ALL-MEMBERS must have the set-name qualification.

NOTE: When the ALL-MEMBERS option is specified, adequate input buffer storage space must be available for each member record type.

```
PATHC3 EMPLOYEE COVERAGE ALL-MEMBERS (COVERAGE-CLAIMS)
SEL BUFFER WHEN REC-NAME EQ ('HOSPITAL-CLAIM', 'NON-HOSP-CLAIM')
```

May 2016

Useful Things to Know About CA Culprit

32





# Sorting + Totalling

- CA Culprit Parameters
- Result
- CA Culprit Processing Cycle

# Sorting + Totalling

*MULTIPLE TOTALS WITH DESCRIPTIVE INFORMATION*

Isn't the report on this page easier to understand than the report on the previous page?

| REPORT NO. 68 DEPARTMENT/STATUS REPORT 09/20/85 PAGE 1 |             |                   |               |
|--|-------------|-------------------|---------------|
| DEPARTMENT NAME  | STATUS CODE | EMPLOYEE NAME     | ANNUAL SALARY |
| PUBLIC RELATIONS                                       | 4           | ZEDI              | 37,000.00     |
|  |             | STATUS CODE TOTAL | 37,000.00     |
|  |             | DEPARTMENT TOTAL  | 37,000.00     |
| THERMOREGULATION                                       | 3           | FINN              | 45,000.00     |
| THERMOREGULATION                                       | 3           | TIME              | 33,000.00     |
| THERMOREGULATION                                       | 3           | WILCO             | 80,000.00     |
|  |             | STATUS CODE TOTAL | 158,000.00    |
| THERMOREGULATION                                       | 4           | CLOTH             | 38,000.00     |
| THERMOREGULATION                                       | 4           | KASPAR            | 31,000.00     |
|  |             | STATUS CODE TOTAL | 69,000.00     |
|  |             | DEPARTMENT TOTAL  | 227,000.00    |
|  |             | GRAND TOTAL       | 264,000.00    |

## Sorting + Totalling

Here are the total lines for the above report.

```
6861*0200'STATUS CODE TOTAL'
6861*030 SALARY
6862*020 'DEPARTMENT TOTAL '
6862*030 SALARY
6863*020 'GRAND TOTAL      '
6863*030 SALARY
```

May 2016

Useful Things to Know About CA Culprit

35

### USING LEVL TO SELECT THE PRINT LINE

You need to use edit line selection in totals processing logic (8 Parameters) to tell CULPRIT which total line to print. But how will you know when it is time to print which line?

CULPRIT uses LEVL to keep track of the different levels of totals and subtotals.

CULPRIT identifies total levels based on the use of a break-code for a sort field. CULPRIT numbers break-codes (not sort fields) from minor to major (right to left) and it always has a level for grand totals.

```
68SORT DEPT-NAME 0 STATUS 0 LAST-NAME
      3          2          1
```

Here's the code you need to find out where you are in the totals processing for the report on the previous page.

```
688010 IF LEVL EQ 3 300
688020 IF LEVL EQ 2 200
688030 TAKE 1
688200 TAKE 2
688300 TAKE 3
```

May 2016

36



# Sorting + Totalling

## FIELD CONTENTS AT TOTAL TIME

The value of fields referenced during output phase processing of type 6 edit and type 8 process parameters can vary depending upon how the information was passed from the extract phase to the output phase.

| Field Type               | ON SORT<br>NOT ON 5 | ON SORT &<br>ON TYPE 5 | NOT ON SORT<br>NOT ON 5 | NOT ON SORT<br>ON TYPE 5 |
|--------------------------|---------------------|------------------------|-------------------------|--------------------------|
| REC - alpha-<br>numeric  | Sort-key<br>value   | Sort-key<br>value      | Error                   | Error                    |
| REC - numeric            | Sort-key<br>value   | Column<br>total        | Error                   | Column<br>total          |
| WORK - alpha-<br>numeric | Sort-key<br>value   | Sort-key<br>value      | Current<br>value        | Current<br>value         |
| WORK - numeric           | Sort-key<br>value   | Column<br>total        | Current<br>value        | Column<br>total          |

## POSITION ZERO

Here's another variation on the sample report from Section 1. Only the last few lines are shown. Note how it differs that report.

|                  |          |              |
|------------------|----------|--------------|
| THEMIS           | PAPAZEUS | 100,000.00   |
| HENRIETTA        | HENDON   | 240,000.00   |
| TOTAL SALARIES:  |          | 1,291,250.00 |
| TOTAL EMPLOYEES: |          | 15           |

Here's some of the code that created the report.

```
010 COUNT 1
0151*000 COUNT
0151*010 EMP-NAME HR
0151*020 SALARY FM 'ZZZ,ZZZ,ZZ9.99-'
0161*0100 'TOTAL SALARIES:
0161*020 SALARY FM 'ZZZ,ZZZ,ZZ9.99-'
0162*010 'TOTAL EMPLOYEES:
0162*020 COUNT SZ=4
```



# Sorting + Totalling

## DETAILS/TOTALS ONLY AND EOF TEST

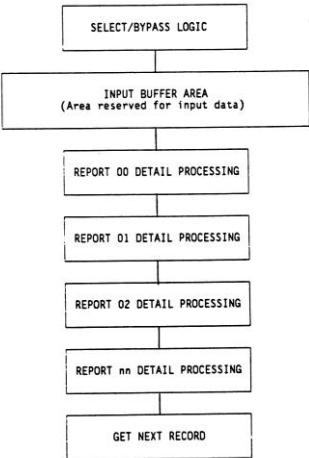
Here's a report where the totaling is done within the extract processing logic (7 Parameters). The balance of each record is added into an accumulator, the counter is incremented, and the record is dropped. After all records have been read, and because CULPRIT sees the EOF test, it allows one more pass through 7 time logic. The average can then be calculated and a detail line printed. The detail line contains the totals accumulated during the processing of the file. The OUT parameter is used to produce a Details only report.

```
REC BRANCH-NAME 5 15
REC CUST-NUMBER 22 5
REC BALANCE 30 5 3 DP=2
REC CUST-NAME 55 20
490OUT 80 D
490 COUNTER WORK-BALANCE DP=2 AVERAGE-BALANCE DP=2
4952*010 'TOTAL BALANCE:'
4952*020 WORK-BALANCE SZ=9
4953*010 'AVERAGE BALANCE:'
4953*020 AVERAGE-BALANCE SZ=9
497010 IF EOF EQ 800
497100 WORK-BALANCE A BALANCE WORK-BALANCE
497 COUNTER A 1 COUNTER
497 DROP
497800 WORK-BALANCE D COUNTER AVERAGE-BALANCE
```

What would the effect have been if the OUT parameter had not been used?  
What would the report have looked like if the OUT parameter had requested a totals only report?

# CA Culprit Processing Cycle

## SELECT/BYPASS AND DETAIL PROCESSING



- Basics follow:
  - Apply SEL/BYP logic
  - Construct a buffer
  - Show the buffer to each report in turn
  - Can STOP-RPT to let other reports process
  - Can STOP-RUN to stop all processing
  - GW variables available to all reports



# Output Options

- Tidying Up Report Output
- Creating an Output File

# Tidying up Report Output

## ELIMINATING THE LISTINGS

After you have successfully coded a CULPRIT run, there may be no need to have the Sequential and Input Parameter Listings print every time you run the job, especially since these listings can be lengthy.

To eliminate the bulk of these listings, insert the PARAM=NOLIST parameter in front of the parameters that you do not want to be listed. If you do want to list some of the parameters, insert the PARAM=LIST parameter (the default) at the point at which you wish to resume the listing.

```
PARAM=NOLIST
IN 450 DD=EMPFIL1
REC EMP-NUMBER 1 5 2
REC EMP-NAME 5 25
REC SALARY 48 5 3 DP=2
REC PART-A 60 250
REC PART-B 436 15
PARAM=LIST
O1OUT 300 1200 D PS DD=NEWFILE
01510001 EMP-NUMBER F2
01510006 EMP-NAME
01510031 PART-A
01510281 SALARY FP
01510286 PART-B
```

- PARAM=NOLIST
- Override the default of SYS004 output
- Special form option NS(S030)

## Creating an Output File

### CREATING AN OUTPUT FILE

To create an output file rather than a printed report, the OUTPUT parameter must be used to identify the file being created. Also, the formatting of the detail line and of numeric fields must be properly handled.

```
IN 450 DD=EMPFILE1
REC EMP-NUMBER 1 5 2
REC EMP-NAME 5 25
REC SALARY 48 5 3 DP=2
REC PART-A 60 250
REC PART-B 436 15
01OUT 300 1200 D PS DD=NEWFILE
01510001 EMP-NUMBER FZ
01510006 EMP-NAME
01510031 PART-A
01510281 SALARY FP
01510286 PART-B
```

May 2016

Useful Things to Know About CA Culprit

43

## Creating the Flat File for the Homework

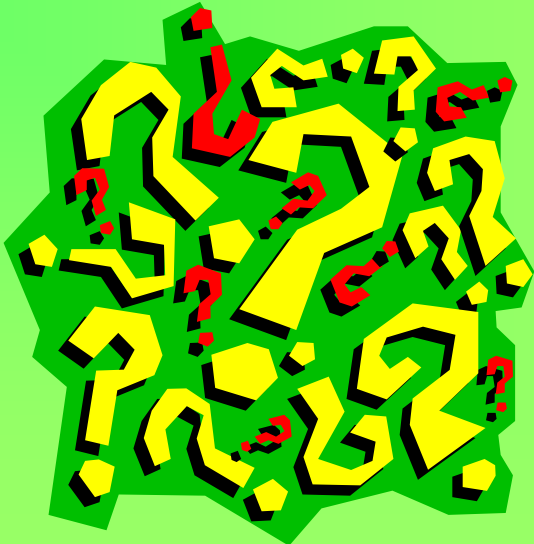
```
IN DB SS=EMPSS01
PATHOK EMPLOYEE DEPARTMENT
PATH-- EMPPOSITION JOB
00OUT 90 D PS DD=EMPFILE
00SORT EMP-NAME-0415
00D10001 EMP-NAME-0415 SZ=25 FN
00D10026 EMP-ID-0415 SZ=4 FN
00D10030 DEPT-NAME-0410 SZ=20 FN
00D10050 TITLE-0440 SZ=20 FN
00D10070 START-DATE-0415 SZ=8 FN
00D10078 SALARY-AMOUNT-0420 SZ=5 FP
00I CALL DB-EXIT ('NEXT' 'EMPOSITION ' 'EMP-EMPOSITION ')
00I IF IDMS-STATUS EQ '0307' 999
00I CALL DB-EXIT ('OWNER' 'JOB ' 'JOB-EMPOSITION ')
00I IF IDMS-STATUS NE '0000' 999
00I TAKE
00I999 DROP
//IDMSCULP.EMPFILE DD DSN=JIS.DEV.CULPRIT.EMPFILE,UNIT=SYSDA,
// DCB=(RECFM=FB,LRECL=90,BLKSIZE=0),DISP=(NEW,CATLG,DELETE),SPACE=(TRK,(5,2))
```

May 2016

Useful Things to Know About CA Culprit

44

# Questions





May 2016

Useful Things to Know About CA Culprit

45

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Poor

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Excellent

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☐

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Rating

Strongly Dislike

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Like

Strongly Like

The speaker was prepared and knowledgeable of the subject presented

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Comments

\_\_\_\_\_

The session met my expectations

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Comments

\_\_\_\_\_

The material is relevant to my current job

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Comments

\_\_\_\_\_

I would recommend this session to a colleague

☐

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Comments

\_\_\_\_\_

The speaker brought new approaches for the content

☐

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Comments

\_\_\_\_\_

General Comments

\_\_\_\_\_

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