

Appendix I

SAMPLE JOB LISTING

```
//SMT JOB (7254,99999942000000,1,6),'NCC',MSGLEVEL=(1,0), JOB 280
// CLASS=C,REGION=110K,TIME=3
***      *** INVOKE SIMCG PROCEDURE ***
***
//      EXEC SIMCG,GOPARM='LINECNT=40,TRACE=200'          1)
++SIMCG  PROC EXLIB=SIMLIB,GOPARM=                        1)
++SIM    EXEC PGM=SIMULA,PARM='LINECNT=40,XREF',REGION=110K  2)
++STEPLIB DD DSN=SIMULA.SIMULA,DISP=SHR                  2)
++SYSPRINT DD SYSOUT=A                                  2)
++SYSUT1 DD UNIT=SYSDA,SPACE=(2000,(20,20))              2)
++SYSUT2 DD UNIT=(SYSDA,SEP=SYSUT1),SPACE=(2000,(20,20))  2)
++SYSUT3 DD UNIT=(SYSDA,SEP=(SYSUT1,SYSUT2)),SPACE=(2000,(20,10)) 2)
++SYSUT4 DD UNIT=(SYSDA,SEP=(SYSUT1,SYSUT2)),SPACE=(1032,256),  2)
++ DCB=DSORG=DA                                         2)
++SYSGD DD DSN=&&LOADSET,DISP=(MOD,PASS),UNIT=(SYSDA,SEP=SYSUT1),  2)
++ SPACE=(1600,(30,30)),DCB=BLKSIZE=1600              2)
//SIM.SYSIN DD *                                        2)
                                                    3)
++GO      EXEC PGM=LOADER,PARM='MAP,PRINT,LET,PR=ZYQENT/&GOPARM',
IEF6531 SUBSTITUTION JCL - PGM=LOADER,PARM='MAP,PRINT,LET,
++ EP=ZYQENT/LINECNT=40,TRACE=200',
++ COND=(4,LT,SIM)                                     4)
++SYSLIN DD DSN=&&LOADSET,DISP=(OLD,PASS)                 4)
++SYSLIB DD DSN=&EXLIB,DISP=SHR                         4)
IEF6531 SUBSTITUTION JCL - DSN=SIMLIB,DISP=SHR         4)
++ DD DSN=SIMLIB,DISP=SHR                              4)
++SYSLOUT DD SYSOUT=A                                  4)
++SYSOUT DD SYSOUT=A                                   4)
//GO.SYSIN DD *                                        4)
                                                    5)
                                                    5)
                                                    5)
IEF3751 JOB /SMT / START 71077.1315
IEF3761 JOB /SMT / STOP 71077.1316 CPU OMIN 05.08SEC
```

-- HASP-II JOB STATISTICS --

```
118 CARDS READ
279 LINES PRINTED
0 CARDS PUNCHED
2.49 MINUTES EXECUTION TIME
```

- 1) Invoke JCL proc SIMCG
- 2) Compilation step: Compile SIMULA program, print cross-reference listing
- 3) SIMULA source program on cards
- 4) Execution step: link, edit and execute SIMULA program using LOADER. Specify object program parameters and runt-time routine library
- 5) Input data to SIMULA program cards

COMPILER OPTIONS

```

NOLIST                1)
NODECK                1)
LOAD                  1)
WARN                  1)
SUBCHK                1)
NOFXTERN              1)
XREF                  1)
SOURCE                1)
NORESVD               1)

LINECNT =             40          1)
MAXERROR=             10          1)
SIZE      = (3072,1632,8192,4096,262144,7294) 1)

```

1) Compiler options and parameter values in effect

```

*)
01 SIMSET
02 BEGIN CLASS RUNE(T,PART,SECTION);VALUE T;INTEGER PART; B1
03     REAL SECTION; TEXT T;
04     BEGIN REF(RUNE)LL,RL; B2
05     REF(HEAD)PTR;
06     PROCEDURE RANK;
07     BEGIN REF(RUNE)ROOT; B3
08     ROOT:-ROOT;
09     SCAN: IF ROOT.T=T THEN NEW PAGE(PART,SECTION).INTO(ROOT.PTR)
10     ELSE BEGIN IF ROOT.T>T THEN B4
11         BEGIN IF ROOT.LL==NONE THEN B5
12             BEGIN ROOT.LL:-THIS RUNE; B6
13                 NEW PAGE(PART,SECTION)
14                 .INTO(PTR);
15             END ELSE E6
16             BEGIN ROOT:-ROOT.LL; B7
17                 GOTO SCAN;
18             END E7
19         END E5
20     ELSE
21     BEGIN IF ROOT.RL==NONE THEN B8
22         BEGIN ROOT.RL:-THIS RUNE; B9
23             NEW PAGE(PART,SECTION)
24             .INTO(PTR);
25         END ELSE E9
26         BEGIN ROOT:-ROOT.RL; B10
27             GOTO SCAN;
28         END E10
29     END E8
30     END E4
31     END***RANK***; E3
32     PTR:-NEW HEAD;
33     END***RUNE***; E2
34     PROCEDURE TRAVERSE(7);REF(RUNE)7;
35     BEGIN REF(PAGE)X; B11
36     INSPECT Z DO
37     BEGIN TRAVERSE(LL); B12
38     OUTTEXT(T); SETPOS(40);

```

```
39      X:=-PTR.FIRST;
40      WHILE X/=NONE DO
41      BEGIN OUTINT(X.PART,1);          B13
42              OUTCHAR(':');
43              OUTFIX(X.SECTION,1,3);
44              OUTCHAR(',');
45              X:=-X.SUC;
46      END;                              E13
47      OUTIMAGE;
48      TRAVERSE(RL);
49  END;                                    E12
50  END***TRAVERSE***;                    E11
51  LINE CLASS PAGE(PART,SECTION); INTEGER PART; REAL SECTION;
52  BEGIN                                  B14
53  END***PAGE***;                          E14
54  TEXT WORD,PARTNO,SECTIONNO;
55  REF(RUNE)ROOT;
56  ROOT:=-NEW RUNE("*****",0,0.0);
57  INSPECT SYSIN DO
58  BEGIN WORD:-IMAGE.SUB(1,40);          B15
59          PARTNO:-IMAGE.SUB(41,1);
60          SECTIONNO:-IMAGE.SUB(43,30);
61  END**SUB-FIELDS;                       E15
62  INIMAGE;
63  WHILE NOT ENDFILE DO
64  BEGIN NEW RUNE(WORD.STRIP,PARTNO.GETINT,
65              SECTIONNO.GETREAL).RANK; INIMAGE;
66  END;                                    E16
67  TRAVERSE(ROOT);
68  END;                                    E1
```

*) begin-end numbering

NO DIAGNOSTICS FOR THIS COMPILATION.

IDENTIFIER	LINE										
ENDFILE	63										
FIRST	39										
GETINT	64										
GETREAL	64										
HEAD	5	32									
IMAGE	58	59	60								
INIMAGE	62	65									
INTO	9	14	24								
LINK	51										
LL	4	11	12	16	37						
OUTCHAR	42	44									
OUTFIX	43										
OUTIMAGE	47										
OUTINT	41										
OUTTEXT	38										
PAGE	9	13	23	35	51						
PART	2*	9	13	23	41	51*					
PARTNO	54	59	64								
ROOT	8	55	56	67							
PTR	5	9	14	24	32	39					
RANK	6	64									
R1	4	21	22	26	48						
ROOT	7	8	9*	10	11	12	16*	21	22	26*	
RUNE	2	4	7	12	22	34	55	56	64		
SCAN	9	17	27								
SECTION	2*	9	13	23	43	51*					
SECTIONNO	54	60	64								
SETPOS	38										
SIMSET	1										
STRIP	64										
SUB	58	59	60								
SUC	45										
SYSIN	57										
T	2*	3	9*	10*	38						
TRAVERSE	34	37	48	67							
WORD	54	58	64								
X	35	39	40	41	43	45*					
Z	34*	36									

TOTAL NUMBER OF DIFFERENTLY SPELLED IDENTIFIERS AVAILABLE IN
THIS PROGRAM : 129

BASIC SYMBOL	2:2.0,2:3.0,
BRACES	2:3.0,2:4.0,
BRACKET	2:3.0,
CLASS-IDENTIFIER	2:5.0,
DIGIT	2:3.0,
IN	2:5.0,
IS	2:5.0,
KEY WORD	2:2.0,
LETTER	2:3.0,
OBJECT-RELATION	2:5.0,
SIMPLE-OBJECT-EXPRESSION	2:5.0,
SYNTACTIC UNIT	2:3.0,2:5.0,
SYNTACTIC VARIABLE	2:1.0,2:3.0,
*****	0:0.0,