ASSIST/I Version 2.03, Copyright 1984, BDM Software. GRADE RUN FOR:

PROGRAM PROLOGUE PAGE 1

LOC OBJECT CODE ADDR1 ADDR2 STMT SOURCE STATEMENT

2 \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

\* \*

\* MICHAEL BEAVER \*

3 \* CS 310, SPRING 2013 \*

\* PROGRAM 2 \*

\* DUE: MARCH 11, 2013 \*

4 \* \*

\* DESCRIPTION: \*

\* THIS PROGRAM EXPECTS AS INPUT A DATA FILE CONTAINING 20 LINES OF \*

5 \* INTEGER DATA (ONE INTEGER PER LINE). THE PROGRAM WILL READ IN THE \*

\* DATA FROM THE FILE AND STORE IT INTO A TABLE. NEXT, THE PROGRAM \*

\* WILL PRINT THE DATA FROM THE TABLE FROM FIRST-TO-LAST (IN THE \*

6 \* ORDER THE DATA WAS ORIGINALLY READ). NEXT, THE PROGRAM WILL PRINT \*

\* THE DATA FROM THE TABLE FROM LAST-TO-FIRST (IN THE OPPOSITE ORDER \*

\* THE DATA WAS ORIGINALLY READ). FINALLY, THE PROGRAM TERMINATES. \*

7 \* \*

\* REGISTER KEY: \*

\* REG 2: INDEX POINTER FOR SUBROUTINES' LOOP-BASED TABLE OPERATIONS \*

8 \* REG 3: DATA VALUE HOLDER FOR SUBROUTINES' OPERATIONS \*

\* REG 8: STEP-SIZE HOLDER FOR SUBROUTINES' LOOPS \*

\* REG 9: TERMINAL VALUE HOLDER FOR SUBROUTINES' LOOPS \*

9 \* REG11: SUBROUTINE BRANCHING (BREAD CRUMBS) \*

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MAIN PROGRAM PAGE 2

LOC OBJECT CODE ADDR1 ADDR2 STMT SOURCE STATEMENT

000000 11 MBPROG2 START

000000 90EC D00C 0000C 13 STM 14,12,12(13) BEGINNING HOUSEKEEPING

000004 05C0 14 BALR 12,0

000006 15 USING SAVING,12

000006 50D0 C022 00028 16 SAVING ST 13,SAVEAREA+4

00000A 41D0 C01E 00024 17 LA 13,SAVEAREA

00000E 45B0 C114 0011A 19 BAL 11,DATAREAD READ IN DATA TO TABLE

000012 45B0 C134 0013A 21 BAL 11,PRINTFTL PRINT TABLE FIRST-TO-LAST

000016 45B0 C1A6 001AC 23 BAL 11,PRINTLTF PRINT TABLE LAST-TO-FIRST

00001A 58D0 C022 00028 25 L 13,SAVEAREA+4 ENDING HOUSEKEEPING

00001E 98EC D00C 0000C 26 LM 14,12,12(13)

000022 07FE 27 BR 14

000024 29 SAVEAREA DS 18F

00006C 30 DATATAB DS 20F

0000BC 31 CARD DS CL80

00010C 40 32 CARRIAGE DC C' '

00010D 33 OUTLINE DS CL12

DATAREAD SUBROUTINE: READ DATA INTO TABLE PAGE 3

LOC OBJECT CODE ADDR1 ADDR2 STMT SOURCE STATEMENT

00011A 4120 C066 0006C 35 DATAREAD LA 2,DATATAB TOP OF TABLE

00011E 4180 0004 00004 36 LA 8,4

000122 4190 C0B2 000B8 37 LA 9,DATATAB+76 BOTTOM OF TABLE

000126 E000 C0B6 0050 000BC 39 TOPREAD XREAD CARD,80 LOOP THRU FILE & STORE DATA

00012C 5330 C0B6 000BC 40 XDECI 3,CARD

000130 5032 0000 00000 41 ST 3,0(2)

000134 8728 C120 00126 42 BXLE 2,8,TOPREAD

000138 07FB 44 BR 11

PRINTFTL SUBROUTINE: PRINT TABLE FIRST-TO-LAST PAGE 4

LOC OBJECT CODE ADDR1 ADDR2 STMT SOURCE STATEMENT

00013A E020 C160 0029 00166 46 PRINTFTL XPRNT PFTLSTRT,41

000140 4120 C066 0006C 48 LA 2,DATATAB TOP OF TABLE

000144 4180 0004 00004 49 LA 8,4

000148 4190 C0B2 000B8 50 LA 9,DATATAB+76 BOTTOM OF TABLE

00014C 5832 0000 00000 52 TOPPFTL L 3,0(2) LOOP & PRINT FIRST-TO-LAST

000150 5230 C107 0010D 53 XDECO 3,OUTLINE

000154 E020 C106 000D 0010C 54 XPRNT CARRIAGE,13

00015A 8728 C146 0014C 55 BXLE 2,8,TOPPFTL

00015E E020 C189 001D 0018F 57 XPRNT PFTLEND,29

000164 07FB 58 BR 11

000166 F1D7D9C9D5E3C9D5 59 PFTLSTRT DC C'1PRINTING TABLE FROM FIRST-TO-LAST VALUE:'

00018F 40C4D6D5C540D7D9 60 PFTLEND DC C' DONE PRINTING FIRST-TO-LAST.'

PRINTLTF SUBROUTINE: PRINT TABLE LAST-TO-FIRST PAGE 5

LOC OBJECT CODE ADDR1 ADDR2 STMT SOURCE STATEMENT

0001AC E020 C1D2 0029 001D8 62 PRINTLTF XPRNT PLTFSTRT,41

0001B2 4120 C0B2 000B8 64 LA 2,DATATAB+76 BOTTOM OF TABLE

0001B6 5880 C21A 00220 65 L 8,=F'-4'

0001BA 4190 C062 00068 66 LA 9,DATATAB-4 TOP OF TABLE-1

0001BE 5832 0000 00000 68 TOPPLTF L 3,0(2) LOOP & PRINT LAST-TO-FIRST

0001C2 5230 C107 0010D 69 XDECO 3,OUTLINE

0001C6 E020 C106 000D 0010C 70 XPRNT CARRIAGE,13

0001CC 8628 C1B8 001BE 71 BXH 2,8,TOPPLTF

0001D0 E020 C1FB 001D 00201 73 XPRNT PLTFEND,29

0001D6 07FB 74 BR 11

0001D8 F1D7D9C9D5E3C9D5 75 PLTFSTRT DC C'1PRINTING TABLE FROM LAST-TO-FIRST VALUE:'

000201 40C4D6D5C540D7D9 76 PLTFEND DC C' DONE PRINTING LAST-TO-FIRST.'

77 END MBPROG2

000220 FFFFFFFC =F'-4'

\*\*\* 0 STATEMENTS FLAGGED - 0 WARNINGS, 0 ERRORS

\*\*\* PROGRAM EXECUTION BEGINNING -

ANY OUTPUT BEFORE EXECUTION COMPLETE MESSAGE IS PRODUCED BY USER PROGRAM \*\*\*

PRINTING TABLE FROM FIRST-TO-LAST VALUE:

99

93

88

87

82

80

76

75

71

69

67

66

63

62

58

56

55

50

42

33

DONE PRINTING FIRST-TO-LAST.

PRINTING TABLE FROM LAST-TO-FIRST VALUE:

33

42

50

55

56

58

62

63

66

67

69

71

75

76

80

82

87

88

93

99

DONE PRINTING LAST-TO-FIRST.

\*\*\* EXECUTION COMPLETED \*\*\*