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 \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

3 \* MICHAEL BEAVER \*

4 \* CS 310, SPRING 2013 \*

5 \* PROGRAM 6 \*

6 \* DUE: APRIL 22,2013 \*

7 \* \*

8 \* DESCRIPTION: \*

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

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

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

12 \* PROGRAM WILL PRINT THE DATA FROM THE TABLE FROM FIRST-TO-LAST \*

13 \* (IN THE ORDER THE DATA WAS ORIGINALLY READ). FINALLY, THE \*

14 \* PROGRAM WILL PRINT THE DATA FROM THE TABLE FROM LAST-TO-FIRST \*

15 \* (IN THE OPPOSITE ORDER THE DATA WAS ORIGINALLY READ). THIS \*

16 \* VERSION OF THE PROGRAM USES EXTERNAL SUBROUTINES. \*

17 \* \*

18 \* SUBROUTINES: \*

19 \* DATAREAD: READS DATA FROM FILE AND STORES INTO DATA TABLE \*

20 \* PRINTFTL: PRINTS DATA FROM TABLE IN ORDER ORIGINALLY READ \*

21 \* PRINTLTF: PRINTS DATA FROM TABLE IN 'REVERSED' ORDER \*

22 \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

MAIN PROGRAM PAGE 2

LOC OBJECT CODE ADDR1 ADDR2 STMT SOURCE STATEMENT

24 \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

25 \* REGISTER KEY: \*

26 \* REG1: USED TO PASS PARAMETER LIST TO SUBROUTINES \*

27 \* REG14: USED TO BRANCH TO SUBROUTINES \*

28 \* REG15: PROVIDES ADDRESS OF SUBROUTINES TO BE BRANCHED TO \*

29 \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

000000 30 MBPROG6 START

000000 90EC D00C 0000C 31 STM 14,12,12(13) BEGINNING HOUSEKEEPING

000004 05C0 32 BALR 12,0

000006 33 USING MAINHERE,12

000006 50D0 C036 0003C 34 MAINHERE ST 13,MAINSAVE+4

00000A 41D0 C032 00038 35 LA 13,MAINSAVE

00000E 4110 C0DA 000E0 37 LA 1,PARMLIST

000012 58F0 C0E2 000E8 38 L 15,=V(DATAREAD) READ DATA FROM FILE INTO TABLE

000016 05EF 39 BALR 14,15

000018 4110 C0DA 000E0 41 LA 1,PARMLIST

00001C 58F0 C0E6 000EC 42 L 15,=V(PRINTFTL) PRINT TABLE FIRST-TO-LAST

000020 05EF 43 BALR 14,15

000022 4110 C0DA 000E0 45 LA 1,PARMLIST

000026 58F0 C0EA 000F0 46 L 15,=V(PRINTLTF) PRINT TABLE LAST-TO-FIRST

00002A 05EF 47 BALR 14,15

00002C 58D0 C036 0003C 49 L 13,MAINSAVE+4 ENDING HOUSEKEEPING

000030 98EC D00C 0000C 50 LM 14,12,12(13)

000034 07FE 51 BR 14

000038 52 MAINSAVE DS 18F

000080 53 DATATAB DS 20F

0000D0 40 54 CARRIAGE DC C' '

0000D1 55 OUTLINE DS CL12

0000E0 00000080 56 PARMLIST DC A(DATATAB)

0000E4 000000D0 57 DC A(CARRIAGE)

58 LTORG

0000E8 00000000 =V(DATAREAD)

0000EC 00000000 =V(PRINTFTL)

0000F0 00000000 =V(PRINTLTF)

DATAREAD: READ DATA INTO TABLE PAGE 3

LOC OBJECT CODE ADDR1 ADDR2 STMT SOURCE STATEMENT

60 \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

61 \* REGISTER KEY: \*

62 \* REG1: USED TO OBTAIN PARAMETERS FROM MAIN \*

63 \* REG2: HOLDS LOOP INDEX CORRESPONDING TO TABLE SPOTS \*

64 \* REG3: HOLDS DATA READ FROM FILE \*

65 \* REG8: HOLDS LOOP STEP SIZE (4) \*

66 \* REG9: HOLDS TERMINAL VALUE FOR LOOP (LAST SPOT IN TABLE) \*

67 \* REG14: USED TO BRANCH BACK TO CALLER \*

68 \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

0000F4 69 DATAREAD CSECT

0000F8 90EC D00C 0000C 70 STM 14,12,12(13) BEGINNING HOUSEKEEPING

0000FC 05C0 71 BALR 12,0

0000FE 72 USING READHERE,12

0000FE 50D0 C036 00134 73 READHERE ST 13,READSAVE+4

000102 41D0 C032 00130 74 LA 13,READSAVE

000106 5821 0000 00000 76 L 2,0(1) TOP OF THE TABLE

00010A 4180 0004 00004 77 LA 8,4

00010E 4192 004C 0004C 78 LA 9,76(2) BOTTOM OF THE TABLE

000112 E000 C07A 0050 00178 80 READTOP XREAD CARD,80 LOOP THRU FILE & STORE DATA

000118 5330 C07A 00178 81 XDECI 3,CARD

00011C 5032 0000 00000 82 ST 3,0(2)

000120 8728 C014 00112 83 BXLE 2,8,READTOP

000124 58D0 C036 00134 85 L 13,READSAVE+4 ENDING HOUSEKEEPING

000128 98EC D00C 0000C 86 LM 14,12,12(13)

00012C 07FE 87 BR 14

000130 88 READSAVE DS 18F

000178 89 CARD DS CL80

90 LTORG

PRINTFTL: PRINT TABLE FIRST-TO-LAST (AS READ) PAGE 4

LOC OBJECT CODE ADDR1 ADDR2 STMT SOURCE STATEMENT

92 \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

93 \* REGISTER KEY: \*

94 \* REG1: USED TO GRAB PARAMETERS FROM MAIN \*

95 \* REG2: LOOP INDEX CORRESPONDING TO SPOTS IN DATA TABLE \*

96 \* REG3: HOLDS VALUES GRABBED FROM TABLE \*

97 \* REG8: HOLDS LOOP STEP SIZE (4) \*

98 \* REG9: HOLDS TERMINAL VALUE FOR LOOP (LAST SPOT IN TABLE) \*

99 \* REG10: HOLDS POINTER TO OUTPUT CARRIAGE CONTROL AND LINE \*

100 \* REG14: USED TO BRANCH BACK TO CALLER \*

101 \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

0001C8 102 PRINTFTL CSECT

0001C8 90EC D00C 0000C 103 STM 14,12,12(13) BEGINNING HOUSEKEEPING

0001CC 05C0 104 BALR 12,0

0001CE 105 USING FTLHERE,12

0001CE 50D0 C046 00214 106 FTLHERE ST 13,FTLSAVE+4

0001D2 41D0 C042 00210 107 LA 13,FTLSAVE

0001D6 E020 C08A 0029 00258 109 XPRNT PFTLSTRT,41

0001DC 5821 0000 00000 111 L 2,0(1) TOP OF THE TABLE

0001E0 4180 0004 00004 112 LA 8,4

0001E4 4192 004C 0004C 113 LA 9,76(2) BOTTOM OF THE TABLE

0001E8 41A1 0004 00004 114 LA 10,4(1) POINTER TO CARRIAGE

0001EC 5832 0000 00000 116 PFTLTOP L 3,0(2) GRAB EACH VALUE AND PRINT IT

0001F0 523A 0001 00001 117 XDECO 3,1(10)

0001F4 E02A 0000 000D 00000 118 XPRNT 0(10),13

0001FA 8728 C01E 001EC 119 BXLE 2,8,PFTLTOP

0001FE E020 C0B3 001D 00281 121 XPRNT PFTLEND,29

000204 58D0 C046 00214 123 L 13,FTLSAVE+4 ENDING HOUSEKEEPING

000208 98EC D00C 0000C 124 LM 14,12,12(13)

00020C 07FE 125 BR 14

000210 126 FTLSAVE DS 18F

000258 F1D7D9C9D5E3C9D5 127 PFTLSTRT DC C'1PRINTING TABLE FROM FIRST-TO-LAST VALUE:'

000281 40C4D6D5C540D7D9 128 PFTLEND DC C' DONE PRINTING FIRST-TO-LAST.'

129 LTORG

PRINTLTF: PRINT TABLE LAST-TO-FIRST (REVERSE ORDER) PAGE 5

LOC OBJECT CODE ADDR1 ADDR2 STMT SOURCE STATEMENT

131 \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

132 \* REGISTER KEY: \*

133 \* REG1: USED TO GRAB PARAMETERS FROM MAIN \*

134 \* REG2: LOOP INDEX CORRESPONDING TO SPOTS IN DATA TABLE \*

135 \* REG3: HOLDS VALUE GRABBED FROM DATA TABLE \*

136 \* REG8: HOLDS LOOP STEP SIZE (-4) \*

137 \* REG9: HOLDS TERMINAL VALUE FOR LOOP (ONE SPOT ABOVE TABLE TOP) \*

138 \* REG10: HOLDS POINTER TO CARRIAGE CONTROL AND OUTPUT LINE \*

139 \* REG14: USED TO BRANCH BACK TO CALLER \*

140 \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

0002A0 141 PRINTLTF CSECT

0002A0 90EC D00C 0000C 142 STM 14,12,12(13) BEGINNING HOUSEKEEPING

0002A4 05C0 143 BALR 12,0

0002A6 144 USING LTFHERE,12

0002A6 50D0 C04E 002F4 145 LTFHERE ST 13,LTFSAVE+4

0002AA 41D0 C04A 002F0 146 LA 13,LTFSAVE

0002AE E020 C092 0029 00338 148 XPRNT PLTFSTRT,41

0002B4 5821 0000 00000 150 L 2,0(1) POINTER TO TOP OF THE TABLE

0002B8 4192 0000 00000 151 LA 9,0(2)

0002BC 5A90 C0DA 00380 152 A 9,=F'-4' POINTER TO TOP OF THE TABLE-4

0002C0 4122 004C 0004C 153 LA 2,76(2) POINTER TO BOTTOM OF THE TABLE

0002C4 5880 C0DA 00380 154 L 8,=F'-4'

0002C8 41A1 0004 00004 155 LA 10,4(1) POINTER TO CARRIAGE

0002CC 5832 0000 00000 157 PLTFTOP L 3,0(2) LOOP & PRINT LAST-TO-FIRST

0002D0 523A 0001 00001 158 XDECO 3,1(10)

0002D4 E02A 0000 000D 00000 159 XPRNT 0(10),13

0002DA 8628 C026 002CC 160 BXH 2,8,PLTFTOP

0002DE E020 C0BB 001D 00361 162 XPRNT PLTFEND,29

0002E4 58D0 C04E 002F4 164 L 13,LTFSAVE+4 ENDING HOUSEKEEPING

0002E8 98EC D00C 0000C 165 LM 14,12,12(13)

0002EC 07FE 166 BR 14

0002F0 167 LTFSAVE DS 18F

000338 F1D7D9C9D5E3C9D5 168 PLTFSTRT DC C'1PRINTING TABLE FROM LAST-TO-FIRST VALUE:'

000361 40C4D6D5C540D7D9 169 PLTFEND DC C' DONE PRINTING LAST-TO-FIRST.'

170 LTORG

000380 FFFFFFFC =F'-4'

171 END MBPROG6

\*\*\* 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:

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DONE PRINTING FIRST-TO-LAST.

PRINTING TABLE FROM LAST-TO-FIRST VALUE:

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DONE PRINTING LAST-TO-FIRST.

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