Source File: lab14.asm
Input: Standard Input
Output: Standard Output
Value: 1

Reserve three doublewords in the .bss section to represent the variables *val1*, *val2*, and *val3*. Accept values for the variables through standard input. Do not alter the contents of the locations symbolically referred to as *val1*, *val2*, and *val3* after they have been read in. Use only the eax register to compute

$$-val1 - val2 - val3$$

Show the contents of the registers after each step in the calculation. Your program should adhere to ordinary rules of algebraic precedence and associativity. Add an identification section as shown below to the top of your source file.

```
; Your name
; CS 3304
; Lab 14
```

A sample execution sequence is shown in Figure 1. To use the Makefile as distributed in class, add a target of lab14 to targetsAsmLanguage.

```
1   newuser@csunix ~/3304/14> make
2   nasm -f elf32  -l lab14.lst -o lab14.o lab14.asm -I/usr/local/3304/include/ -I.
3   ld -m elf_i386 --dynamic-linker /lib/ld-linux.so.2 -o lab14 lab14.o \
4   /usr/local/3304/src/Along32.o -lc
5   newuser@csunix ~/3304/14> # Execute ./lab14 with interactive input
6   newuser@csunix ~/3304/14> ./lab14
7   1
8   2
9   3
10
11    EAX=00000003  EBX=F7700FBC  ECX=F76FABBF  EDX=F76EE480
12    ESI=FF8EF74C  EDI=080481B0  EBP=00000000  ESP=FF8EF740
13    EIP=080481D3  EFL=00000206  CF=0  SF=0  ZF=0  OF=0  AF=0  PF=1
14
15
16    EAX=00000001  EBX=F7700FBC  ECX=F76FABBF  EDX=F76EE480
17    ESI=FF8EF74C  EDI=080481B0  EBP=00000000  ESP=FF8EF740
18    EIP=080481DD  EFL=00000206  CF=0  SF=0  ZF=0  OF=0  AF=0  PF=1
19
20
21    EAX=FFFFFFFF  EBX=F7700FBC  ECX=F76FABBF  EDX=F76EE480
22    ESI=FF8EF74C  EDI=080481B0  EBP=00000000  ESP=FF8EF740
23    EIP=080481E4  EFL=00000297  CF=1  SF=1  ZF=0  OF=0  AF=1  PF=1
24
25
26    EAX=FFFFFFFD  EBX=F7700FBC  ECX=F76FABBF  EDX=F76EE480
27    ESI=FF8EF74C  EDI=080481B0  EBP=00000000  ESP=FF8EF740
28    EIP=080481EF  EFL=00000282  CF=0  SF=1  ZF=0  OF=0  AF=0  PF=0
29
30
31    EAX=FFFFFFFA  EBX=F7700FBC  ECX=F76FABBF  EDX=F76EE480
32    ESI=FF8EF74C  EDI=080481B0  EBP=00000000  ESP=FF8EF740
33    EIP=080481FA  EFL=00000286  CF=0  SF=1  ZF=0  OF=0  AF=0  PF=1
34
```

Figure 1. Commands to Assemble, Link, & Run Lab 14 (Part 1 of 2)

```
35   newuser@csunix ~/3304/14> # Create an input file 01.dat
36   newuser@csunix ~/3304/14> # Enter the data items -1, -2, -3, one item per line
37   newuser@csunix ~/3304/14> cat 01.dat
38   -1
39   -2
40   -3
41   newuser@csunix ~/3304/14> # Execute ./lab14 using ./irvine_test.sh
42   newuser@csunix ~/3304/14> ./irvine_test.sh lab14 01.dat
43
44     EAX=FFFFFFFD  EBX=F775AFBC  ECX=F7754BBF  EDX=F7748480
45     ESI=FFC081DC  EDI=080481B0  EBP=00000000  ESP=FFC081D0
46     EIP=080481D3  EFL=00000282  CF=0  SF=1  ZF=0  OF=0  AF=0  PF=0
47
48
49     EAX=FFFFFFFF  EBX=F775AFBC  ECX=F7754BBF  EDX=F7748480
50     ESI=FFC081DC  EDI=080481B0  EBP=00000000  ESP=FFC081D0
51     EIP=080481DD  EFL=00000282  CF=0  SF=1  ZF=0  OF=0  AF=0  PF=0
52
53
54     EAX=00000001  EBX=F775AFBC  ECX=F7754BBF  EDX=F7748480
55     ESI=FFC081DC  EDI=080481B0  EBP=00000000  ESP=FFC081D0
56     EIP=080481E4  EFL=00000213  CF=1  SF=0  ZF=0  OF=0  AF=1  PF=0
57
58
59     EAX=00000003  EBX=F775AFBC  ECX=F7754BBF  EDX=F7748480
60     ESI=FFC081DC  EDI=080481B0  EBP=00000000  ESP=FFC081D0
61     EIP=080481EF  EFL=00000217  CF=1  SF=0  ZF=0  OF=0  AF=1  PF=1
62
63
64     EAX=00000006  EBX=F775AFBC  ECX=F7754BBF  EDX=F7748480
65     ESI=FFC081DC  EDI=080481B0  EBP=00000000  ESP=FFC081D0
66     EIP=080481FA  EFL=00000217  CF=1  SF=0  ZF=0  OF=0  AF=1  PF=1
67
68   newuser@csunix ~/3304/14>
```

Figure 1. Commands to Assemble, Link, & Run Lab 14 (Part 2 of 2)