Source File: `lab18.asm`
Input: None
Output: Standard Output
Value: 2

Write a program using the `loop` instruction that copies a string from `source` to `target`, reversing the character order in the process. Use the following initialized variables:

```
1  SECTION .data
2  source  db      "This is the source string",0
3  length  equ     $ - source
4  target  times   length db '#'
```

Use the following code segment as a guide to display the hexadecimal contents of an area of memory. Use this code segment to display the contents of the `source` string and the `target` string twice—once before the loop and once after the loop.

```
1  mov     esi, source          ; Place address of variable in esi
2  mov     ecx, length          ; Place # of units to display in ecx
3  mov     ebx, 1               ; Use byte format
4  call    DumpMem
```

(The `DumpMem` procedure is explained in Section 5.4.)

Add an identification section as shown below to the top of your source file.

```
; Your name
; CS 3304
; Lab 18
```

A sample execution sequence is shown in Figure 1. To use the `Makefile` as distributed in class, add a target of `lab18` to `targetsAsmLanguage`.

```
 1   newuser@csunix ~/3304/18> make
 2   nasm -f elf32  -l lab18.lst -o lab18.o lab18.asm -I/usr/local/3304/include/ -I.
 3   ld -m elf_i386 --dynamic-linker /lib/ld-linux.so.2 -o lab18 lab18.o \
 4   /usr/local/3304/src/Along32.o -lc
 5   newuser@csunix ~/3304/18> ./lab18
 6
 7   Dump of offset 0804A010
 8   -----------------------------
 9   54 68 69 73 20 69 73 20 74 68 65 20 73 6F 75 72
10   63 65 20 73 74 72 69 6E 67 00
11
12   Dump of offset 0804A02A
13   -----------------------------
14   23 23 23 23 23 23 23 23 23 23 23 23 23 23 23 23
15   23 23 23 23 23 23 23 23 23 23
16
17   Dump of offset 0804A010
18   -----------------------------
19   54 68 69 73 20 69 73 20 74 68 65 20 73 6F 75 72
20   63 65 20 73 74 72 69 6E 67 00
21
22   Dump of offset 0804A02A
23   -----------------------------
24   00 67 6E 69 72 74 73 20 65 63 72 75 6F 73 20 65
25   68 74 20 73 69 20 73 69 68 54
26   newuser@csunix ~/3304/18>
```

Figure 1. Commands to Assemble, Link, & Run Lab 18