

**TA: Jade Cheng**  
**ICS 312**  
**Homework Solution #9**  
**Due Date: September 22, 2009**

**Program Code**

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```
;; program3.asm -- This program reads in a string for characters up to 20 bytes
;; along using function 0ah, and then print it out using function 9.
.model small
.stack 100
.386          ; The cbw and cwd instructions are available on all 80x86
              ; processors. The movzx, movsx, cwde, cdq instructions
              ; are available only on 80386 and later processors.

.data
max           db      15          ; define function 0ah required data,
count        db      0          ; which needs to be in this order.
Buffer       db      15 dup ('?')
Newline      db      0dh, 0ah, '$' ; CRLF
msg          db      'Count is: $' ; a message to show the count size.

.code
prog        proc
mov         ax, @data
mov         ds, ax
mov         ah, 0ah          ; call 0ah function
lea        dx, max
int        21h
lea        dx, newline      ; move to the next line.
Mov        ah, 9h
Int        21h
Movsx      bx, count        ; replace the CR with end of line sign.
Mov        buffer[bx], '$'
mov        ah, 9h          ; print out the contents in buffer.
Lea        dx, buffer
Int        21h
Lea        dx, newline      ; move to the next line.
mov        ah, 9h
int        21h
lea        dx, msg          ; print out the message.
```

```

        Mov         ah, 9h
        int         21h
        add         [count], '0'      ; print out the content in count.
        mov         ah, 2h
        mov         dl, [count]
        int         21h
        mov         al, 0              ; return code of 0
        mov         ah, 4ch           ; function code for exit to os
        int         21h
prog    endp
        end         prog

```

## Program Output

```

C:\WINDOWS\system32\cmd.exe
C:\masm615\Programs\tests\hw#9>dir
Volume in drive C has no label.
Volume Serial Number is 6C86-A0A6

Directory of C:\masm615\Programs\tests\hw#9

09/19/2009  02:40 PM    <DIR>          .
09/19/2009  02:40 PM    <DIR>          ..
09/19/2009  02:40 PM                1,977 hw#9.asm
               1 File(s)                1,977 bytes
               2 Dir(s)  7,064,776,704 bytes free

C:\masm615\Programs\tests\hw#9>ml hw#9.asm
Microsoft (R) Macro Assembler Version 6.14.8444
Copyright (C) Microsoft Corp 1981-1997.  All rights reserved.

Assembling: hw#9.asm

Microsoft (R) Segmented Executable Linker Version 5.60.339 Dec  5 1994
Copyright (C) Microsoft Corp 1984-1993.  All rights reserved.

Object Modules [.obj]: hw#9.obj
Run File [hw#9.exe]: "hw#9.exe"
List File [nul.map]: NUL
Libraries [.lib]:
Definitions File [nul.def]:

C:\masm615\Programs\tests\hw#9>hw#9.exe
jade
jade
Count is: 4
C:\masm615\Programs\tests\hw#9>hw#9.exe
my name is jad
my name is jad
Count is: >
C:\masm615\Programs\tests\hw#9>_

```