



OCTOBER 3, 2022

COMPUTER ORGANIZATION &  
ASSEMBLY LANGUAGE LAB  
LAB 02 PRACTICE TASK

**BCS203193**  
MUHAMMAD HARRIS – SECTION 4



# Practice Task

## Task 01

Print the following output on the command window using 0Dh, 0Ah Operator:

```
*  
**  
***  
****
```

Code:

```
.model small  
.data  
lineone db "*","$"  
linetwo db 0ah,0dh,"***","$"  
linethree db 0ah,0dh,"****","$"  
linefour db 0ah,0dh,"*****","$"  
.code  
mov ax,@data  
mov ds,ax  
  
mov ah,9  
mov dx, offset lineone  
int 21h  
  
mov ah,9  
mov dx, offset linetwo  
int 21h  
  
mov ah,9  
mov dx, offset linethree  
int 21h  
  
mov ah,9  
mov dx, offset linefour  
int 21h  
  
mov ah,4ch  
int 21h
```

```
01 .model small
02 .data
03 lineone db "a", "5"
04 linetwo db 0ah, 0dh, "a", "5"
05 linethree db 0ah, 0dh, "****", "5"
06 linefour db 0ah, 0dh, "*****", "5"
07 .code
08 mov ax, 0data
09 mov ds, ax
10
11 mov ah, 9
12 mov dx, offset lineone
13 int 21h
14
15 mov ah, 9
16 mov dx, offset linetwo
17 int 21h
18
19 mov ah, 9
20 mov dx, offset linethree
21 int 21h
22
23 mov ah, 9
24 mov dx, offset linefour
25 int 21h
26
27 mov ah, 4ch
28 int 21h
```

```
0a05
0a05
0a05
0a05
```

## Task 02

Write the following message on the console using (0Ah = line feed):

**This**

**is**

**my**

**“Name”**

Code:

```
.model small
.data
lineone db "This","$"
linetwo db 0ah,0dh," is","$"
linethree db 0ah,0dh," my","$"
linefour db 0ah,0dh," name","$"
.code
mov ax,@data
mov ds,ax

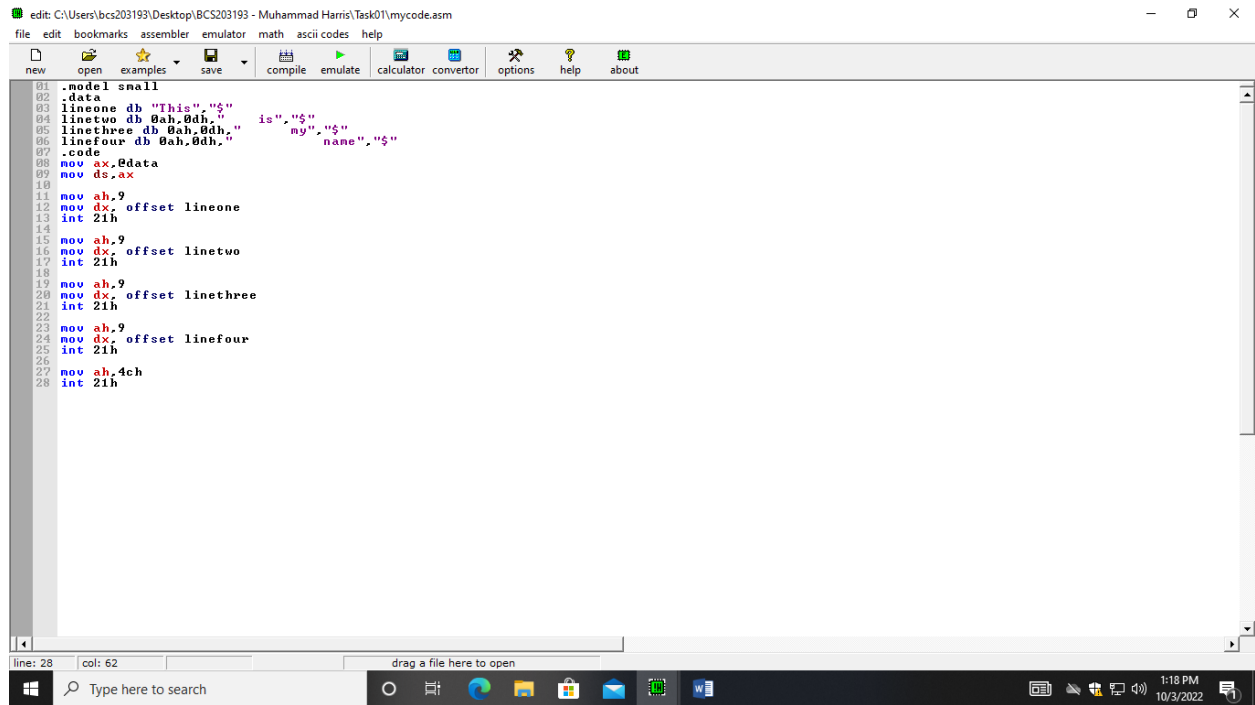
mov ah,9
mov dx, offset lineone
int 21h

mov ah,9
mov dx, offset linetwo
int 21h

mov ah,9
mov dx, offset linethree
int 21h

mov ah,9
mov dx, offset linefour
int 21h

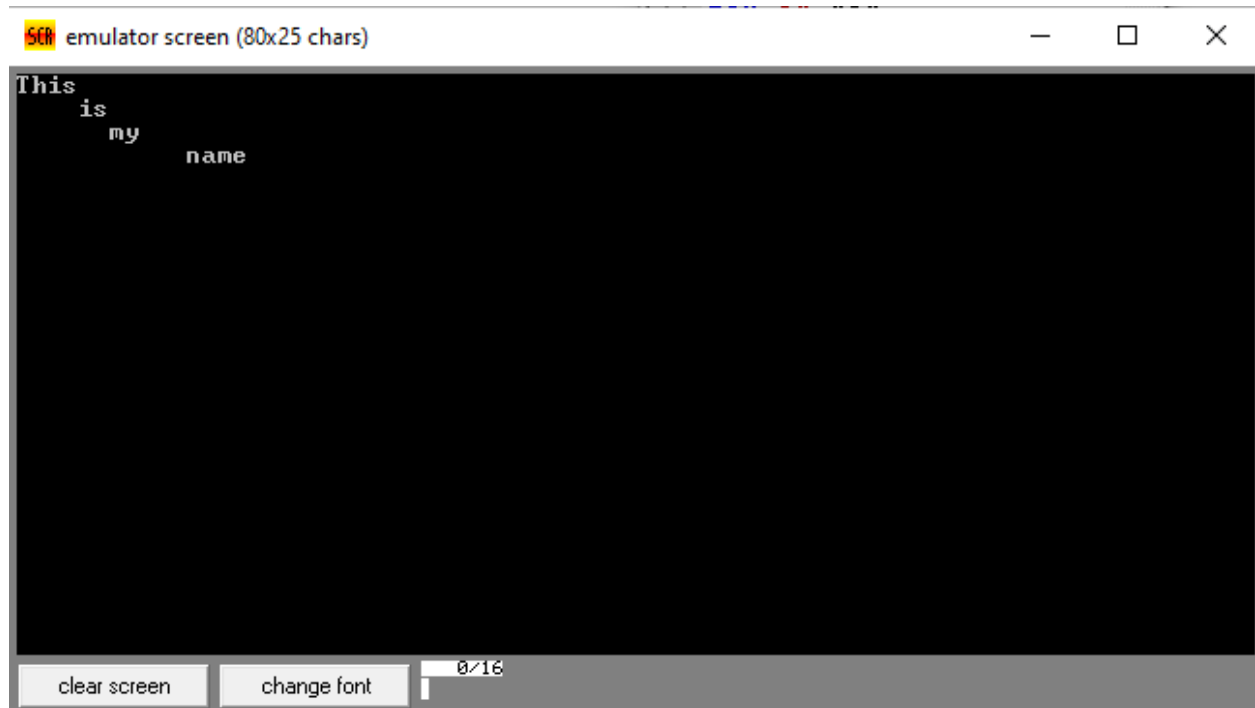
mov ah,4ch
int 21h
```



The screenshot shows an assembly editor window titled "edit: C:\Users\hcs203193\Desktop\BCS203193 - Muhammad Harris\Task01\mycode.asm". The window has a menu bar with "file", "edit", "bookmarks", "assembler", "emulator", "math", "ascii codes", and "help". Below the menu is a toolbar with icons for "new", "open", "examples", "save", "compile", "emulate", "calculator", "converter", "options", "help", and "about". The main text area contains the following assembly code:

```
01 .model small
02 .data
03 lineone db "This", "%s"
04 linetwo db 0ah, 0dh, " is", "%s"
05 linethree db 0ah, 0dh, " my", "%s"
06 linefour db 0ah, 0dh, " name", "%s"
07 .code
08 mov ax, 0data
09 mov ds, ax
10
11 mov ah, 9
12 mov dx, offset lineone
13 int 21h
14
15 mov ah, 9
16 mov dx, offset linetwo
17 int 21h
18
19 mov ah, 9
20 mov dx, offset linethree
21 int 21h
22
23 mov ah, 9
24 mov dx, offset linefour
25 int 21h
26
27 mov ah, 4ch
28 int 21h
```

The status bar at the bottom indicates "line: 28" and "col: 62". The Windows taskbar is visible at the bottom of the screen.



The screenshot shows an emulator window titled "emulator screen (80x25 chars)". The screen displays the output of the assembly program, which is the string "This is my name" printed in a monospaced font. The text is arranged as follows:

```
This
  is
    my
      name
```

At the bottom of the emulator window, there are two buttons: "clear screen" and "change font". To the right of these buttons is a small text box showing "0/16".

## Task 03

**Print the following patterns in console using assembly language.**

[illegible]

Code:

```

.model small
.data
lineone db "*"
linetwo db 0ah,0dh,"**"
linethree db 0ah,0dh,"***"
linefour db 0ah,0dh,"****"
linefive db 0ah,0dh,"*****"
linesix db 0ah,0dh,"*****"
lineseven db 0ah,0dh,"*****"
lineeight db 0ah,0dh,"*****"
linenine db 0ah,0dh,"*****"
lineten db 0ah,0dh,"*****"
lineeleven db 0ah,0dh,"*****"
linetwelve db 0ah,0dh,"*****"
.code
mov ax,@data
mov ds,ax

mov ah,9
mov dx, offset lineone
int 21h

mov ah,9
mov dx, offset linetwo
int 21h

mov ah,9
mov dx, offset linethree
int 21h

mov ah,9
mov dx, offset linefour
int 21h

```

```
mov ah,9  
mov dx, offset linefive  
int 21h
```

```
mov ah,9  
mov dx, offset linesix  
int 21h
```

```
mov ah,9  
mov dx, offset lineseven  
int 21h
```

```
mov ah,9  
mov dx, offset lineeight  
int 21h
```

```
mov ah,9  
mov dx, offset linenine  
int 21h
```

```
mov ah,9  
mov dx, offset lineten  
int 21h
```

```
mov ah,9  
mov dx, offset lineeleven  
int 21h
```

```
mov ah,9  
mov dx, offset linetwelve  
int 21h
```

```
mov ah,4ch  
int 21h  
mov ah,4ch  
int 21h
```

```
edit: C:\Users\hcs203193\Desktop\BCS203193 - Muhammad Harris\Task01\mycode.asm
file edit bookmarks assembler emulator math ascii codes help
new open examples save compile emulate calculator convertor options help about

01 .model small
02 .data
03 lineone db "1"
04 linetwo db 0ah,0dh,"2"
05 linethree db 0ah,0dh,"3"
06 linefour db 0ah,0dh,"4"
07 linefive db 0ah,0dh,"5"
08 linesix db 0ah,0dh,"6"
09 lineseven db 0ah,0dh,"7"
10 lineeight db 0ah,0dh,"8"
11 linenine db 0ah,0dh,"9"
12 lineten db 0ah,0dh,"10"
13 lineeleven db 0ah,0dh,"11"
14 linetwelve db 0ah,0dh,"12"
15 .code
16 mov ax,@data
17 mov ds,ax
18
19 mov ah,9
20 mov dx, offset lineone
21 int 21h
22
23 mov ah,9
24 mov dx, offset linetwo
25 int 21h
26
27 mov ah,9
28 mov dx, offset linethree
29 int 21h
30
31 mov ah,9
32 mov dx, offset linefour
33 int 21h
34
35 mov ah,9
36 mov dx, offset linefive
37 int 21h
38
39 mov ah,9
40 mov dx, offset linesix
41 int 21h
42
43 mov ah,9
44 mov dx, offset lineseven
45 int 21h
46
47 mov ah,9
48 mov dx, offset lineeight
49 int 21h
50
51 mov ah,0
52
line: 55 col: 51 drag a file here to open
Type here to search 1:31 PM 10/3/2022
```

```
edit: C:\Users\hcs203193\Desktop\BCS203193 - Muhammad Harris\Task01\mycode.asm
file edit bookmarks assembler emulator math ascii codes help
new open examples save compile emulate calculator convertor options help about

31 mov ah,9
32 mov dx, offset linefour
33 int 21h
34
35 mov ah,9
36 mov dx, offset linefive
37 int 21h
38
39 mov ah,9
40 mov dx, offset linesix
41 int 21h
42
43 mov ah,9
44 mov dx, offset lineseven
45 int 21h
46
47 mov ah,9
48 mov dx, offset lineeight
49 int 21h
50
51 mov ah,9
52 mov dx, offset linenine
53 int 21h
54
55 mov ah,9
56 mov dx, offset lineten
57 int 21h
58
59 mov ah,9
60 mov dx, offset lineeleven
61 int 21h
62
63 mov ah,9
64 mov dx, offset linetwelve
65 int 21h
66
67 mov ah,4ch
68 int 21h |

line: 68 col: 13 drag a file here to open
Type here to search 1:31 PM 10/3/2022
```



