



## **Computer Organization & Assembly Language**

### **LAB 10**

**Submitted to:**

Ma'am Rehana

**Submitted by:**

Mahnoor Zahid

66572

BSCS-3

## Task 1

The screenshot shows the emu8086 software interface. The main window displays assembly code for a program that prints "Hello". The code includes directives like .model small, .stack 100h, and .data, followed by a byte array arr db 'H', 'e', 'l', 'l', 'o', '\$'. The .code section contains the main procedure (main proc) which initializes pointers, sets up a loop (loopz), and uses INT 21h to output characters. It ends with INT 21h and RET. A separate terminal window titled "SCR emulator screen (46x11 chars)" shows the output "Hello".

```
emu8086 - assembler and microprocessor emulator 4.08
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01 ; You may customize this and other start-up templates;
02 ; The location of this template is c:\emu8086\inc\0_com_template.txt
03 ; Mahnoor Zahid 66572
04 org 100h
05
06 .model small
07 .stack 100h
08 .data
09 arr db 'H', 'e', 'l', 'l', 'o', '$'
10
11 .code
12 main proc
13     mov ax, @data
14     mov ds, ax
15     mov si, offset arr
16     mov cx, 5
17 loopz:
18     mov dl,[si]
19     mov ah, 2
20     int 21h
21
22     inc si
23     loop loopz
24
25     mov ah, 4Ch
26     int 21h
27 main endp
28 end main
29
30 ret
```

SCR emulator screen (46x11 chars)

Hello

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## Task 2

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```
01 ; You may customize this and other start-up templates;
02 ; The location of this template is c:\emu8086\inc\0_com_template.txt
03 ; Mahnoor Zahid 66572
04 org 100h
05 .model small
06 .stack 100h
07 .data
08 arr db 5 DUP('#'), '$'
09
10 .code
11 main proc
12     mov ax, @data
13     mov ds, ax
14     mov si, offset arr
15     mov cx, 5
16
17 displayloop:
18     mov dl, [si]
19     mov ah, 2
20     int 21h
21     inc si
22     loop displayloop
23
24     mov ah, 4Ch
25     int 21h
26 main endp
27 end main
28
29 ret
```

508 emulator screen (37x9 chars)

#####

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## Task 3

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```
01 ; Mahnoor Zahid 66572
02 org 100h
03 .model small
04 .stack 100h
05 .data
06 arr db 5 dup(?)
07 msg1 db 'Enter 5 characters: $'
08 msg2 db 10,13, 'You entered: $'
09
10 .code
11 main proc
12     mov ax, @data
13     mov ds, ax
14     mov ah, 9
15     mov dx, offset msg1
16     int 21h
17     mov si, offset arr
18     mov cx, 5
19
20 inputloop:
21     mov ah, 1
22     int 21h
23     mov [si], al
24     inc si
25     loop inputloop
26     mov ah, 9
27     mov dx, offset msg2
28     int 21h
29     mov si, offset arr
30     mov cx, 5
31
32 displayloop:
33     mov dl, [si]
34     mov ah, 2
35     int 21h
36     inc si
37     loop displayloop
38
39     mov ah, 4Ch
40     int 21h
41 main endp
42 end main
43 ret
```

emulator screen (45x11 chars)

Enter 5 characters: abcde  
You entered: abcde

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