RIPHAH
INTERNATIONAL UNIVERSITY

Computer Organization & Assembly Language

LAB 13

Submitted to:

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Submitted by:

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66572

BSCS-3

Task 1

emu8086 - assembler and microprocessor emulator 4.08

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```
; You may customize this and other start-up templates;
; The location of this template is c:\emu8086\inc\0_com_template.txt
; Mahnoor Zahid
org 100h
.model small
.stack 100h
.data
.code
main proc
    mov ax, @data
    mov ds, ax

    mov cx, 5
    mov bx, 1

loop:
    push cx

    mov cx, bx
    call Stars

    call newline

    inc bx

    pop cx
    loop loop

    mov ah, 4Ch
    int 21h
main endp
Stars proc
Starsloop:
    mov dl, '*'
    mov ah, 2
    int 21h
    loop Starsloop
    ret
Stars endp
newline proc
    mov dl, 10
    mov ah, 2
    int 21h
    mov dl, 13
    mov ah, 2
    int 21h
    ret
newline endp

end main
```

emulator screen (46x17 chars)

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

clear screen change font 0/16

Task 2

emu8086 - assembler and microprocessor emulator 4.08

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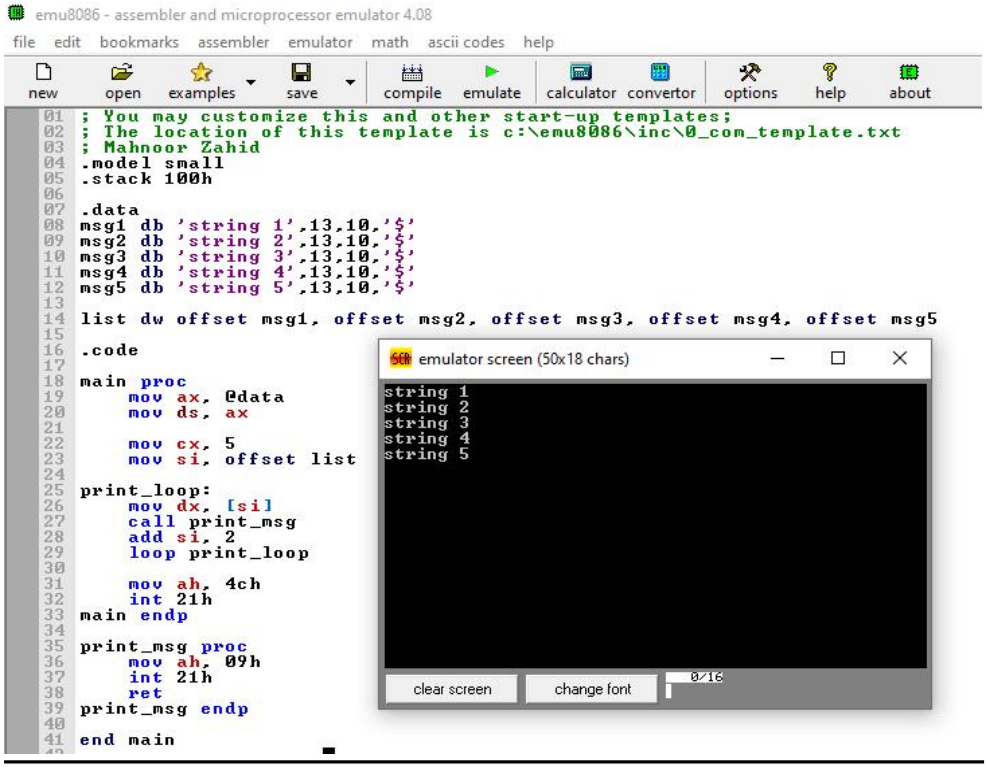
```
; You may customize this and other start-up templates;
; The location of this template is c:\emu8086\inc\0_com_template.txt
; Mahnoor Zahid
string macro p1
    mov dx,offset p1
    mov ah,9
    int 21h
    string endm


.data
str1 db 'Mahnoor Zahid$'
str2 db '66572$'


.code
main proc
    mov ax,@data
    mov ds,ax

    string str1
    call print

    string str2
    call print

   main endp
print proc
    mov dl,10
    mov ah,2
    int 21h

    mov dl,13
    mov ah,2
    int 21h

     ret
    print endp
    end main
ret
```

emulator screen (48x16 chars)

```
Mahnoor Zahid
66572
```

clear screen change font 0/16

Task 3


emu8086 - assembler and microprocessor emulator 4.08
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new open examples save compile emulate calculator convertor options help about
; You may customize this and other start-up templates;
; The location of this template is c:\emu8086\inc\0_com_template.txt
; Mahnoor Zahid
.model small
.stack 100h
.data
msg1 db 'string 1',13,10,'$'
msg2 db 'string 2',13,10,'$'
msg3 db 'string 3',13,10,'$'
msg4 db 'string 4',13,10,'$'
msg5 db 'string 5',13,10,'$'
list dw offset msg1, offset msg2, offset msg3, offset msg4, offset msg5
.code
main proc
mov ax, @data
mov ds, ax
mov cx, 5
mov si, offset list
print_loop:
mov dx, [si]
call print_msg
add si, 2
loop print_loop
mov ah, 4ch
int 21h
main endp
print_msg proc
mov ah, 09h
int 21h
ret
print_msg endp
end main
emulator screen (50x18 chars)
string 1
string 2
string 3
string 4
string 5
clear screen
change font
0/16