

LAB TASK 6

1 (a) **Write a program in assembly language to print single character on screen.**

```
ORG 100h
```

```
MOV AH, 01h
```

```
INT 21h
```

```
MOV DL, AL
```

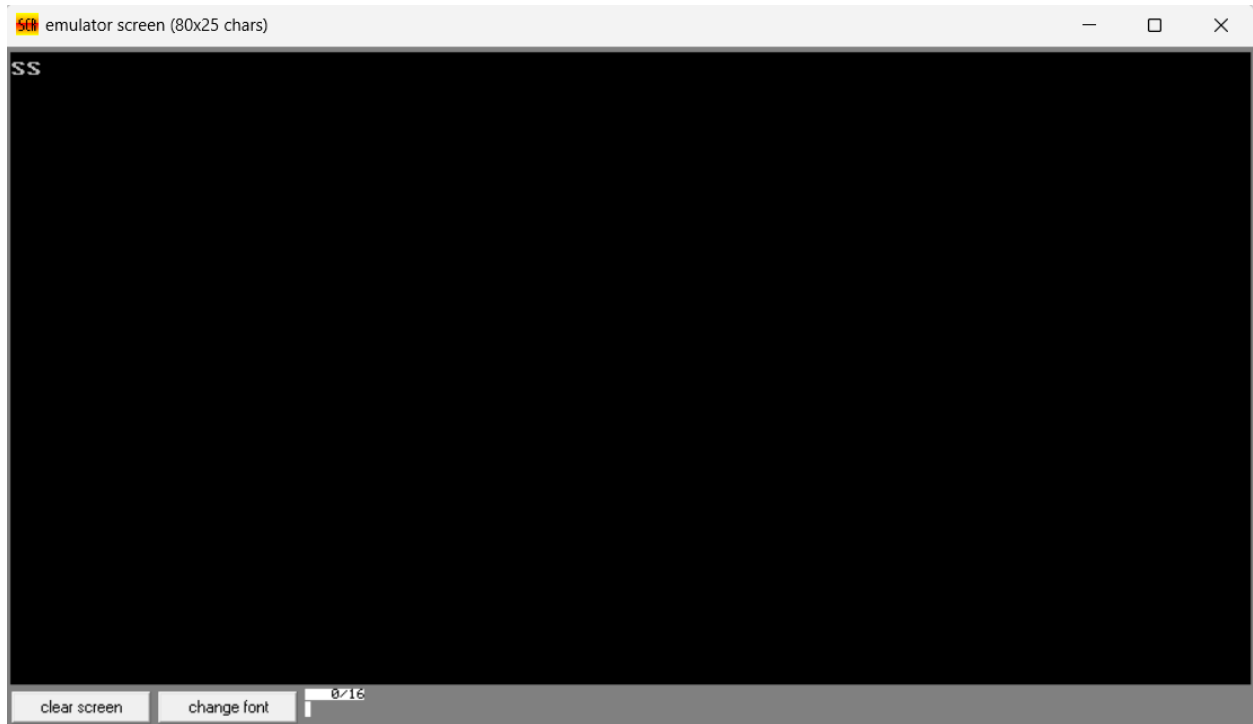
```
MOV AH, 02h
```

```
INT 21h
```

```
MOV AH, 4Ch
```

```
INT 21h
```

```
END
```



(b) Write an assembly language program to convert an upper-case letter to the corresponding lower-case letter.

org 100h

; display input message

mov dx, offset msg_input

mov ah, 09h

int 21h

; read character

mov ah, 01h

int 21h

mov dl, al

mov bl, al

; check if the character is an uppercase letter

cmp al, 'A'

jl notuppercase

cmp al, 'Z'

jg notuppercase

; convert uppercase to lowercase

add bl, 20h

;print the output message

mov dx, offset msg_output

mov ah, 09h

int 21h

; print the converted lowercase letter

mov dl, bl

mov ah, 02h ; 02h to print a single character

int 21h

jmp endprogram

notuppercase:

; print the error message

mov dx, offset msg_error

mov ah, 09h

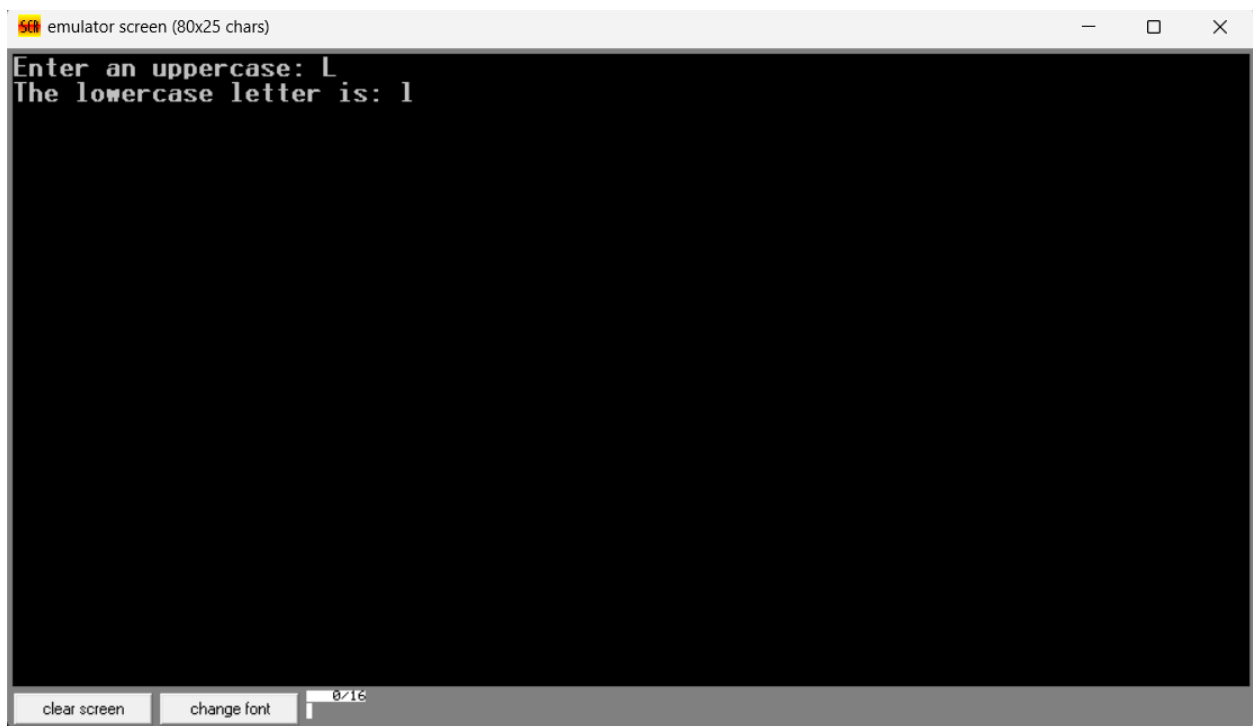
int 21h

```
endprogram:
; end the program

mov ah, 4Ch
int 21h

; data segment

msg_input db 'Enter an uppercase: $'
msg_output db 0dh, 0ah, 'The lowercase letter is: $'
msg_error db 0dh, 0ah, 'Error: Not an uppercase! $'
```



2. (a) **Write a program in assembly language to print multiple characters on screen.**

ORG 100h ; Origin, to specify that the program starts at 100h (COM file format)

MOV DX, OFFSET msg ; Load the address of the message

MOV AH, 09h ; Function 09h of INT 21h is used to display a string

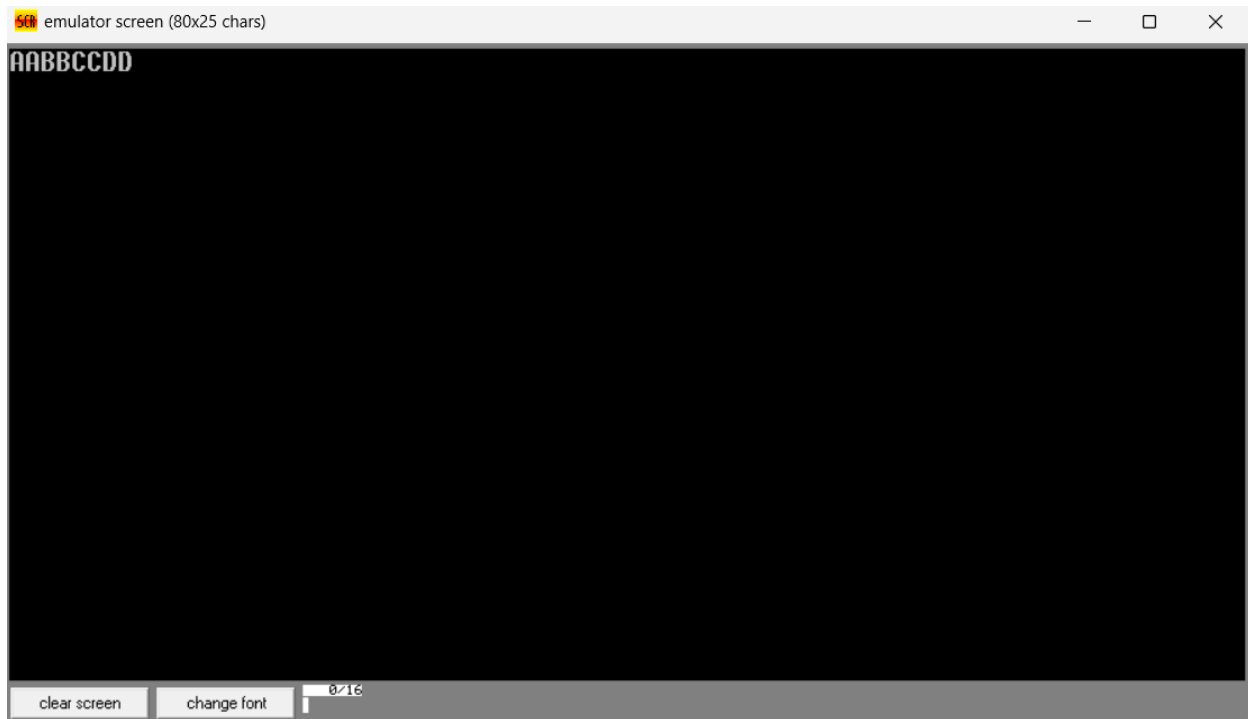
INT 21h ; Call DOS interrupt to print the message

MOV AH, 4Ch ; Function 4Ch of INT 21h terminates the program

INT 21h ; Call DOS interrupt to exit

msg DB 'Hello, Assembly Language!', 0Dh, 0Ah, '\$' ; The message to be displayed, ending with '\$'

END



(b) Write an assembly language program to convert a lower-case letter to the corresponding upper-case letter.

org 100h

; display input message

mov dx, offset msg_input

mov ah, 09h

int 21h

; read character

mov ah, 01h

int 21h

mov dl, al

mov bl, al

; check if the character is a lowercase letter

cmp al, 'a'

jl notlowercase

cmp al, 'z'

jg notlowercase

; convert lowercase to uppercase

sub bl, 20h

; print the output message

mov dx, offset msg_output

mov ah, 09h

int 21h

; print the converted uppercase letter

mov dl, bl

mov ah, 02h ; 02h to print a single character

int 21h

jmp endprogram

notlowercase:

; print the error message

mov dx, offset msg_error

mov ah, 09h

int 21h

endprogram:

; end the program

mov ah, 4Ch

int 21h

; data segment

msg_input db 'Enter a lowercase letter: \$'

msg_output db 0dh, 0ah, 'The uppercase letter is: \$'

msg_error db 0dh, 0ah, 'Error: Not a lowercase letter! \$'

