National University of Computer and Emerging Sciences

Lab Manual

Computer Organization and Assembly Language

Lab 10

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Class	DS3
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Objectives

- Subroutines
- Display Memory
- String Instructions

Contents

 Note for all questions: You can make as many memory variables, subroutines as you need. Must read all the manuals before starting.

ACTIVITY 1: [50 Marks] Write a program that prints and prints the following messages: one message per keypress.
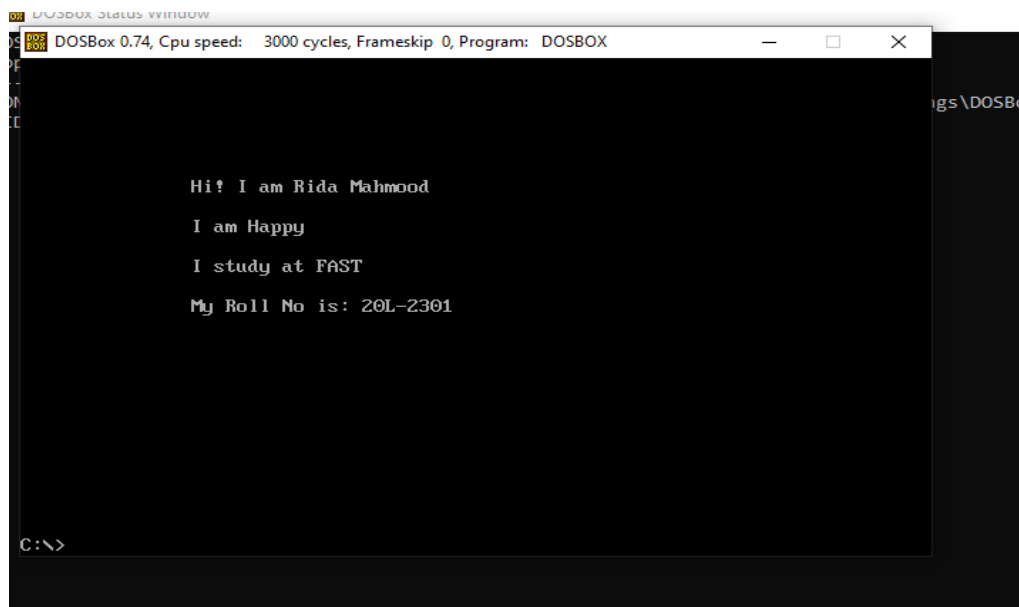
'msg1: Hi! I am YourName.'
'msg2: I am YourMode(Happy, Sad, etc).'
'msg3: I Study at FAST.'
'msg4: My Roll No is YourRoll#.'
Expected output after 4 key presses

ACTIVITY 2: [50 Marks]

```
[org 0x0100]
jmp code
w equ 70 ; width offset
x equ 50 ; starting x coordinate of line
y equ 100 ; starting y coordinate of line
c equ 60 ; color
code: mov ah, 0
 mov al, 13h
 int 10h
; draw diagonal 11:
        mov cx, x
        mov dx, y
 mov al, c
u1: inc dx
        mov ah, 0ch ; put pixel
 int 10h
 inc cx
 cmp cx, x+w
 jbe u1
;wait for keypress
 mov ah,00
 int 16h
 mov ax, 0x4c00
 int 21h
```
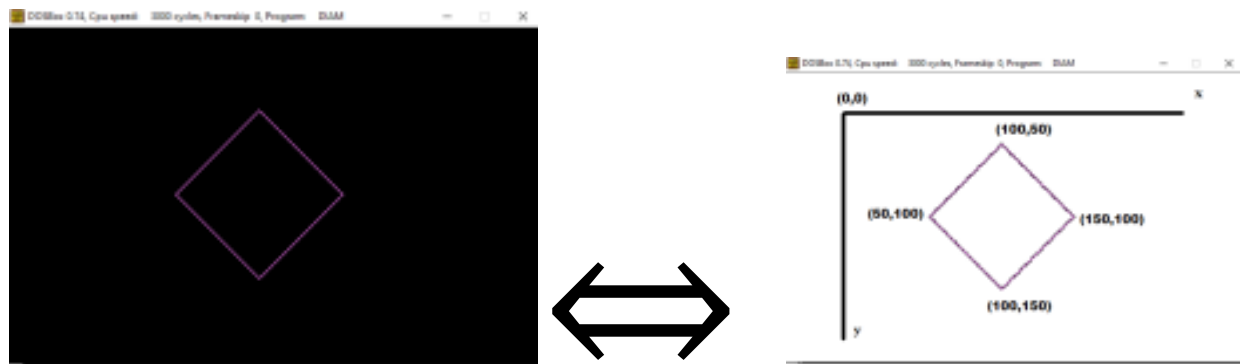
Given:

Start with given (x, y) = (50,100) and in every loop iteration increment both Cx and Dx to reach (x + w, y + w) = (120,170).
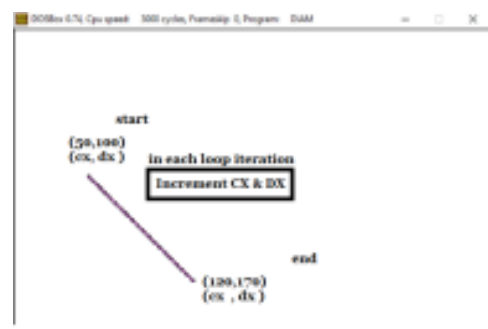
Required:

Similarly, you need to draw 4 lines as above satisfying the coordinates and increment or decrement as per requirement of the line as shown below.

REFERENCES

[1] https://www.youtube.com/watch?v=ylmCcDf3Oek

[2] http://www.dosbox.com/download.php?main=1

[3] http://sourceforge.net/projects/nasm

[4] http://www.nasm.us/

[5] http://www.programmersheaven.com/download/21643/download.aspx (AFD)