

National University of Computer and Emerging Sciences



Laboratory Manual
for
Computer Organization and Assembly Language Lab
(EL 229)

Course Instructor	Ms. Aleena Ahmed
Lab Instructor(s)	Ms. Nimra Abbas Mr. Raja Muzammil Muneer
Section	3J
Semester	Fall 2022

Department of Computer Science
FAST-NU, Lahore, Pakistan

Question 1

Suppose we split the video memory part in 4 half like in image given below.

First half (**Upper Left Part**) X-axis is (0,40) and Y-axis is (0,12)

Second half (**Upper Right Part**) X-axis is (41,80) and Y-axis is (0,12)

Third half (**Lower Left Part**) X-axis is (0,40) and Y-axis is (13,24)

Forth half (**Lower Right Part**) X-axis is (41,80) and Y-axis is (13,24)

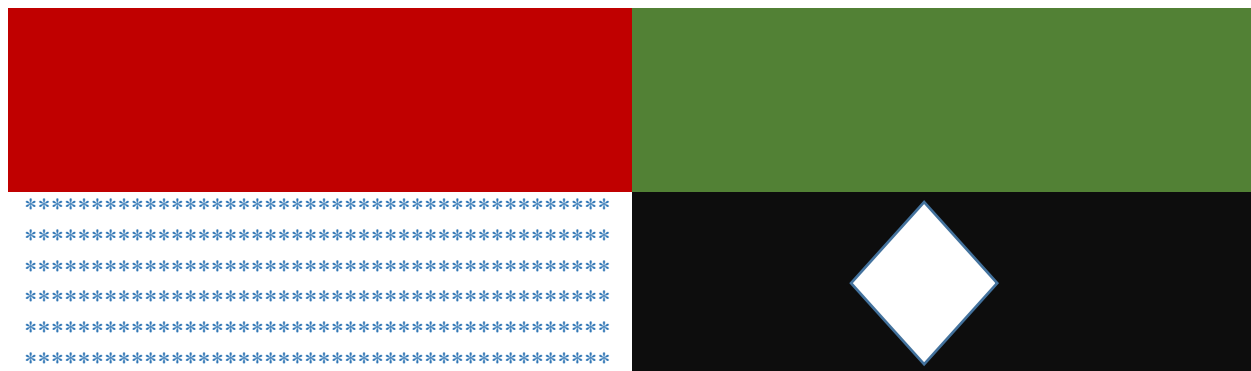
→Paint the **Upper Left Part** red starting from top left to top right. After painting first row, start painting 2nd row from right to left, then 3rd row from left to right and so on

→Paint the **Upper Right Part** green starting from first column painting it from top to bottom, then 2nd column from bottom to top, then 3rd column from top to bottom and so on

→Start filling **Lower Left Part** with asterisk '*'. First make a boundary of lower left part with asterisks; starting from top left position of lower left part, moving right then moving down then moving left and then moving back to top left, then fill all the adjacent cells inside it in same manner and so on

→Show the making of a solid diamond in the center of **Lower Right Part**

In the end your screen should look like this:



Question 2

Write a function that can display the date in different formats.

To get date related information you can use service ah=2ah of INT 21h (details listed below). Your function will use the information obtained to display the date on video memory in different formats.**Hook your function to Interrupt 80h. Your date displaying function will be available as service INT 80h.

The function should be able to display the date in 3 different formats

****Formats**

Format 1 : 30/03/2017

Format 2 : 30, March 2017

Format 3 : Thursday, March 30, 2017

For differentiating between formats you can use the BL register, where BL goes from 0 to 2, for passing the information regarding the type of format to the interrupt.

The following code should display the date on video memory in format three in the last row.

```
mov bl,2 ; use format 3
```

```
INT 80h
```

AH = 2Ah / INT 21h

Return Values:

CX = year (1980-2099)

DH = month

DL = day

AL = day of week (00h=Sunday)