**Activity 1:** You are given two arrays, array1 and array2 along with their sizes, size1 and size2, respectively. Both arrays are sorted already, but array1 is sorted ascending order while array2 is sorted in descending order. You have to **merge** the two arrays **in place, so** that the resulting array looks sorted in **descending** order and contains elements from array1 and array2.

For this, you cannot use **any sorting** algorithm. You cannot use the **stack** for sorting/merging. You **cannot** use any **extra memory** location/variable. Use **registers**.

**Sample input/output**

| State of data variables **before** running the code:  array1: db 1,2,3,4,5,6,7  array2: db 9,6,4,1  size1: db 7  size2: db 4 | State of data variables **after** running the code:  array1: db 9,7,6,6,5,4,4  array2: db 3,2,1,1  size1: db 7  size2: db 4 |
| --- | --- |

**Activity 2:** Write a function **PrintRectanlge** that prints a rectangle having its TopLeft and BottomRight corners at (top,left) and (bottom,right) coordinates respectively where top, left, bottom and right are parameters passed by caller. Also pass attribute by caller to print colored rectangle. Following is a red rectangle with TopLeft = (2, 10) and BottomRight = (20, 60).

**Bonus:** Take the color of triangle as input to get bonus marks. (Bonus marks will added in previous lab marks)

**Activity 2:** Make function/subroutine “PrintTriangle” and print 3 triangles of different angles and colors. Take the color and angle of each triangle as input.

**HINT:**  the Loop should have 3 steps,

Loop1:

print Triangle at new location

delay

clear screen

jmp loop1

code for delay is :

**delay:**

**push cx**

**mov cx, 3 ; change the values to increase delay time**

**delay\_loop1:**

**push cx**

**mov cx, 0xFFFF**

**delay\_loop2:**

**loop delay\_loop2**

**pop cx**

**loop delay\_loop1**

**pop cx**

**ret**

Activity 3: