Computer Graphics Lab
Lab 3 Manual

[You need to submit your source files for Task 1 and Task 2. Also, you'll need to submit a report in .txt format where you will mention how you did Task 1 and Task 2.
Write Task 3 in the report.
Don't zip the files, just add and hand in the assignment. Name the source file mentioning your registration number.
*** Provide screenshots of your output for Task 1 and Task 2]*
*** You may take the help of the textbook but not any online resources*
*** Use black background and white for scan converting color*

Task 1: 35%

Let's assume, a region is defined by its boundary points (you may assume the region is excluding the boundary points and totally inside it). The following code portion defines the boundary.
Now, fill this region using the boundary-fill algorithm taking (3,3) as the seed. You may regard this region as a 4-connected region.

```
for(int i=1; i<=5; i++){
    for(int j=1; j<=10; j++)
    {
        if(i==1 || i==5)
            pair <int,int> boundary_point = {i,j+i};
        else
        {
            if(j==1 || j==10)
                pair <int,int> boundary_point = {i+j+1};
        }
    }
}
```

Task 2: 55%

You're given the vertices of a polygon in a counterclockwise direction.

$$V = \{(0,-4),(-4,-2),(-4,0),(-2,2),(0,0),(4,4),(4,-4)\}$$

Use the scan line polygon algorithm for coloring this polygon.

Task 3: 10%

Compare the complexity of Task 1 and Task 2 for coloring a polygon.