

Name : Shivani Patwal

Rollno : 1121134

Answer 1

Floodfill algorithm using 8 connected Approach

Step 1: start

Step 2: Initialize the value of seed point  $(x, y)$ , old, newcol.

Step 3: Define the boundary values of the polygon

Step 4: Check if the current seed point is of default color then repeat the steps 4 & 5 till the boundary pixels reached.

(if  $\text{getpixel}(x, y) = \text{newcol}$  then repeat step 4 & 5)

Step 5: Change the default color with the fill color at the seed point.

$\text{setPixel}(x, y, \text{old})$

Step 6: Recursively follow the procedure  
with four neighbourhood point

```
Floodfill (x+1, y, old, newcol);  
Floodfill (x-1, y, old, newcol);  
Floodfill (x, y+1, old, newcol);  
Floodfill (x, y-1, old, newcol);  
Floodfill (x+1, y+1, old, newcol);  
Floodfill (x-1, y+1, old, newcol);  
Floodfill (x+1, y-1, old, newcol);  
Floodfill (x-1, y-1, old, newcol);
```

Step 7: Exit.

## Program

```
#include <stdio.h>
#include <graphics.h>
#include <dos.h>

void floodfill (int x, int y, int old, int newcol)
{
    int current;
    current = getpixel(x, y);
    if (current == old)
    {
        delay(5);
        putpixel(x, y, newcol);
        floodfill(x + 1, y, old, newcol);
        floodfill(x - 1, y, old, newcol);
        floodfill(x, y + 1, old, newcol);
        floodfill(x, y - 1, old, newcol);
        floodfill(x + 1, y + 1, old, newcol);
        floodfill(x - 1, y + 1, old, newcol);
        floodfill(x + 1, y - 1, old, newcol);
        floodfill(x - 1, y - 1, old, newcol);
    }
}

void main()
{
    int gd = DETECT, gm;
```



```
initgraph(&gd, &gm, "");  
rectangle(50, 50, 150, 150);  
floodfill(70, 70, 0, 15);  
getch();  
closegraph();  
}
```

