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Subject - Computer Graphics and animations

Q-1 → Write an algorithm and program to implement Floodfill Algorithm using 8 connected approach.

Algorithm →

Step-1 - Initialize the value of seed point (seedx, seedy), fcolor and dcol.

Step-2 - Define the boundary values of the polygon.

Step-3 - Check if the current seed point is of default color then repeat the steps 4 and 5 till the boundary pixels reached.
(if getpixel(x, y) = dcol then repeat step 4 and 5)

Step-4 - Change the default color with the fill color at the seed point.
(setpixel (seedx, seedy, fcol)

Step-5 - Recursively follow the procedure with 4 neighbourhood points.

```
floodfill (seedx-1, seedy, fcol, dcol)
floodfill (seedx+1, seedy, fcol, dcol)
floodfill (seedx, seedy-1, fcol, dcol)
floodfill (seedx, seedy+1, fcol, dcol)
floodfill (seedx-1, seedy+1, fcol, dcol)
floodfill (seedx+1, seedy+1, fcol, dcol)
floodfill (seedx+1, seedy-1, fcol, dcol)
floodfill (seedx-1, seedy-1, fcol, dcol)
```

step-6 - Exit.

Program →

```
#include <stdio.h>
#include <graphics.h>
#include <dos.h>
#include <conio.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, "C:\TURBOC3\\BGI");
```

```
rectangle(50,50,150,150);
floodfill(70,70,0,15);
    getch();
    closegraph();
}
```