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course- BCA B

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subject- computer graphics

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Q write an algorithm and program to implement floodfill algorithm using 8 connected approach.

```c
# include <stdio.h>
# include <graphics.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, old, newcol);
        floodfill (x-1, old, newcol);
```

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

# Algorithm

floodfill (x, y, oldcolor, newcolor)

1) If x or y is outside the screen, then return

2) If color of getpixel (x, y) is same as old color then

3) Recur for top, bottom, right, left

floodfill (x, y, oldcolor, newcolor)
floodfill (x+1, y, oldcolor, newcolor)
floodfill (x-1, y, oldcolor, newcolor)
floodfill (x, y-1, oldcolor, newcolor)
floodfill (x+1, y+1, oldcolor, newcolor)
floodfill (x-1, y+1, oldcolor, newcolor)
floodfill (x+1, y-1, oldcolor, newcolor)
floodfill (x-1, y-1, oldcolor, newcolor)