

## CG-Assignment Flood Fill and Boundary Fill

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Boundary Fill C-21

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Aim:- Implementing boundary fill algorithm.

Algorithm:

```
void boundaryFill(int x, int y, int fillColour, int boundaryColour) {  
    if (getpixel(x, y) != fillColour && getpixel(x, y) != boundaryColour) {  
        putpixel(x, y, fillColour);  
        // then recursively call function for surrounding  
        boundaryFill(x+1, y, fillColour, boundaryColour);  
        /* do the same  
        * recursively call the function for:  
        x+1, y  
        x-1, y  
        x, y+1  
        x, y-1 */  
    }  
}
```

Calling the function in main function with coordinates inside a shape the drawn shape.

### Program:

Implementing Boundary Fill Algorithm

### Code:

```
#include<stdio.h>  
#include<graphics.h>  
#include<conio.h>  
  
void boundaryFill(int x, int y, int fillColour, int  
boundaryColour){  
    if(getpixel(x,y)!=fillColour && getpixel(x,y)!  
=boundaryColour){
```

```

        putpixel(x,y,fillColour);
        boundaryFill(x+1,y,fillColour,boundaryColour);
        boundaryFill(x,y+1,fillColour,boundaryColour);
        boundaryFill(x-1,y,fillColour,boundaryColour);
        boundaryFill(x,y-1,fillColour,boundaryColour);
    }
}

void main()
{
    int a,b,c,d;
    int gd = DETECT,gm;
    clrscr();
    initgraph(&gd,&gm,"C:\\\\turbo3\\bgi");
    printf("Enter the coordinates for start point\n");
    scanf("%d%d",&a,&b);
    printf("Enter the coordinates for the second point\n");
    scanf("%d%d",&c,&d);
    rectangle(a,b,c,d);
    printf("\nHriday Keswani\n2003088");
    boundaryFill(a+4,b+4,3,15);
    getch();
    closegraph();
}

```

## Output:

```

Enter the coordinates for start point
250
250
Enter the coordinates for the second point
300
300

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```



# Flood Fill

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C-21

Aim: Implementing Flood Fill algorithm

Algorithm:

```
void floodFill(int x, int y, int oc, int nc) {  
    // Take input for x, y, oc, nc  
    // make function with 4 parameters  
    floodFill(x, y, oc, nc) // all int-type  
    if (getpixel(x, y) == oc) {  
        putpixel(x, y, nc);  
        floodFill(x+1, y, oc, nc);  
        floodFill(x-1, y, oc, nc);  
        floodFill(x, y+1, oc, nc);  
        floodFill(x, y-1, oc, nc);  
    }  
}
```

// nc = new colour

// oc = old colour

// recursion being used to fill surrounding pixels

\*The function is called within the coordinates of the colour shape being filled (square rectangle in the context of program)

## Program:

Implementing Flood Fill Algorithm

## Code:

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

```

#include<conio.h>
#include<stdio.h>
#include<graphics.h>
#include<conio.h>

void floodFill(int x, int y, int oc, int nc){
    if(getpixel(x,y)==oc){
        putpixel(x,y,nc);
        floodFill(x+1,y,oc,nc);
        floodFill(x-1,y,oc,nc);
        floodFill(x,y+1,oc,nc);
        floodFill(x,y-1,oc,nc);
    }
}

void main()
{
    int a,b,c,d;
    int gd = DETECT,gm;
    clrscr();
    initgraph(&gd,&gm,"C:\\\\turbo3\\bgi");
    printf("Enter the coordinates for start point\n");
    scanf("%d%d",&a,&b);
    printf("Enter the coordinates for the second point\n");
    scanf("%d%d",&c,&d);
    rectangle(a,b,c,d);
    floodFill(a+10,b+10,0,15);
    printf("\nHriday Keswani\n2003088");
    getch();
    closegraph();
}

```

## Output:

```

Enter the coordinates for start point
200
200
Enter the coordinates for the second point
250
250

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```

