



আন্তর্জাতিক ইসলামী বিশ্ববিদ্যালয় চট্টগ্রাম  
الجامعة الإسلامية العالمية شيتاغونغ  
International Islamic University Chittagong

Department of Computer Science & Engineering(CSE)

Lab -06

Name : Jabed Iqbal Joy  
Student ID : C193049  
Semester : 7th  
Section : 7BM  
Email : c193049@ugrad.iiuc.ac.bd  
Contact : 01837844828  
Course Code : CSE-4742  
Course Title : Computer Graphics Lab

Name of the course Teacher :

**Mahadi Hassan**

Assistant Professor

Department of CSE, IIUC

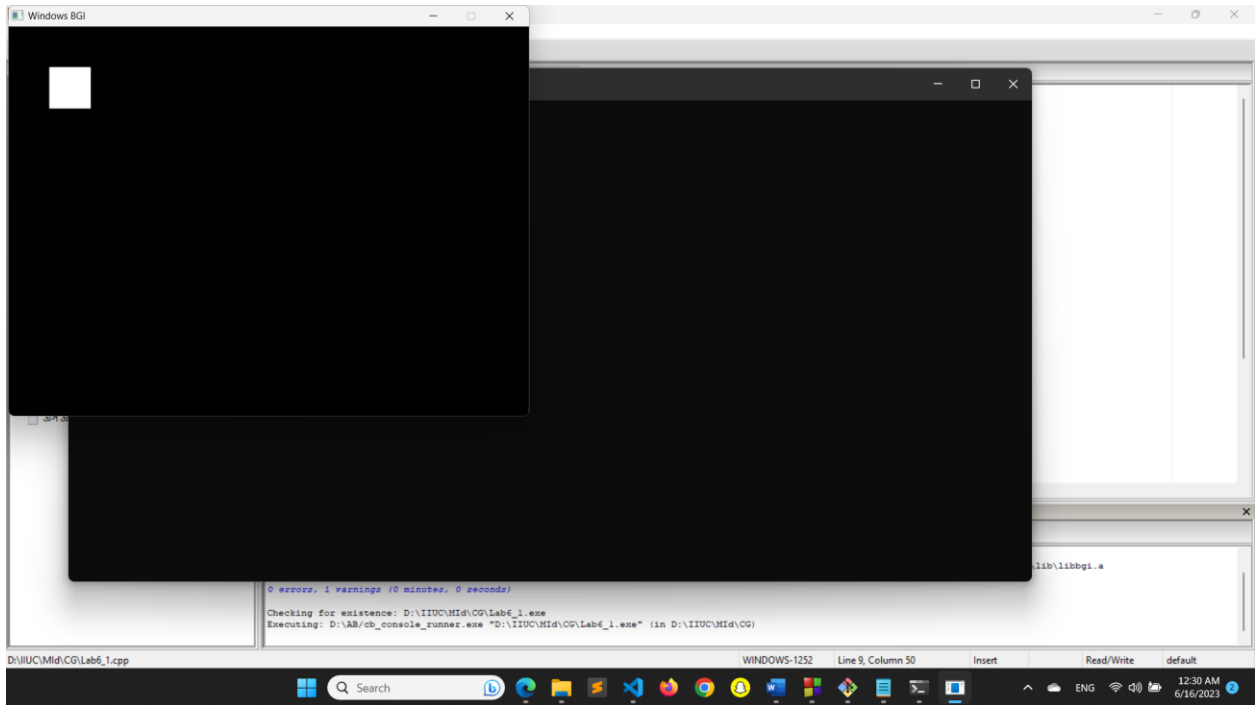
Date of Submission : 30/03/2023

## 1. Flood Fill algorithm

Code: #include <graphics.h>

```
void floodFill(int x, int y, int fill_color, int old_color) {  
    if (getpixel(x, y) == old_color) {  
        putpixel(x, y, fill_color);  
        floodFill(x+1, y, fill_color, old_color);  
        floodFill(x-1, y, fill_color, old_color);  
        floodFill(x, y+1, fill_color, old_color);  
        floodFill(x, y-1, fill_color, old_color);  
    }  
}
```

```
int main() {  
    int gd = DETECT, gm;  
    initgraph(&gd, &gm, "");  
  
    // Draw a rectangle and fill it with color  
    rectangle(50, 50, 100, 100);  
    floodFill(75, 75, WHITE, BLACK);  
  
    getch();  
    closegraph();  
  
    return 0;  
}
```



## 2. Boundary Fill.

Code:

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

```
void boundaryFill(int x, int y, int fill_color, int bound_color) {  
    if (getpixel(x, y) != fill_color && getpixel(x, y) != bound_color) {  
        putpixel(x, y, fill_color);  
        boundaryFill(x+1, y, fill_color, bound_color);  
        boundaryFill(x-1, y, fill_color, bound_color);  
        boundaryFill(x, y+1, fill_color, bound_color);  
        boundaryFill(x, y-1, fill_color, bound_color);  
    }  
}
```

```
int main() {  
    int gd = DETECT, gm;  
    initgraph(&gd, &gm, "");
```

```
    // Draw a rectangle and fill its border with color  
    rectangle(50, 50, 100, 100);
```

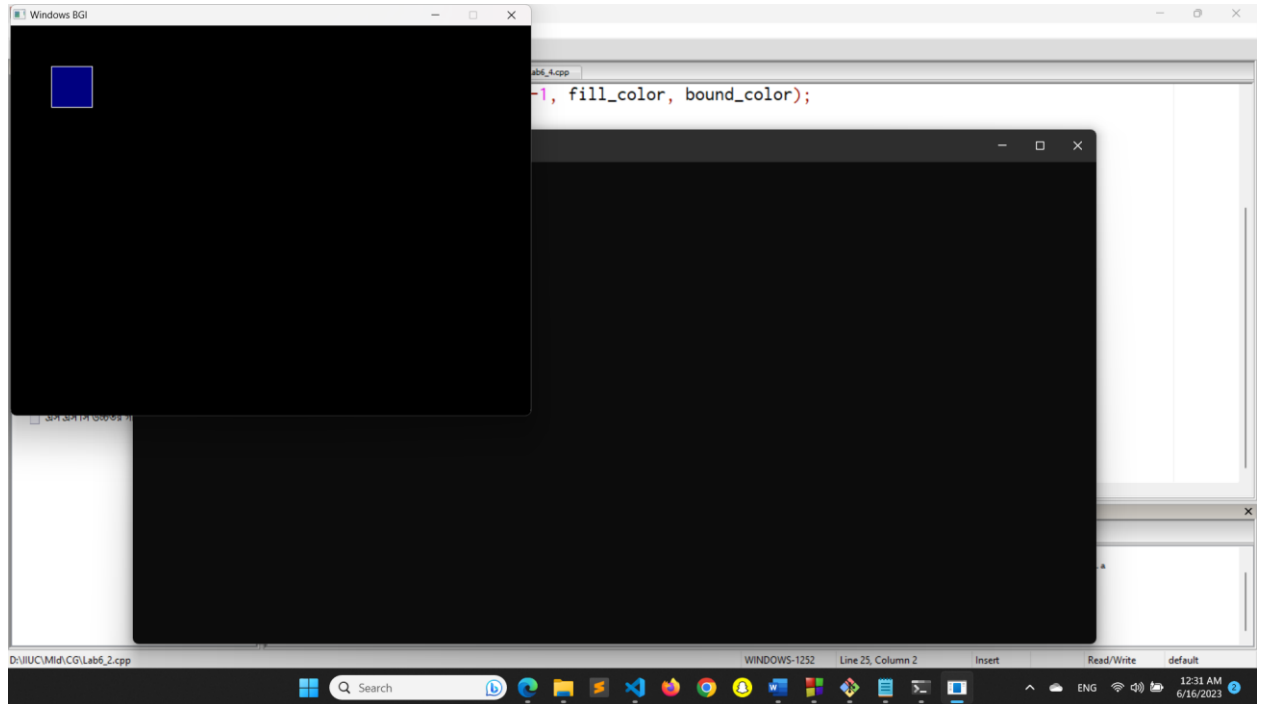
```
boundaryFill(75, 75, BLUE, WHITE);
```

```
getch();
```

```
closegraph();
```

```
return 0;
```

```
}
```



### 3. Bitmap font.

Code:

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

```
// Define a bitmap font for the letter 'A'
```

```
int bitmap_A[8][8] = {  
    {0, 0, 1, 1, 0, 0, 0, 0},  
    {0, 1, 0, 0, 1, 0, 0, 0},  
    {1, 0, 0, 0, 0, 1, 0, 0},  
    {1, 0, 0, 0, 0, 1, 0, 0},  
    {1, 1, 1, 1, 1, 1, 0, 0},  
    {1, 0, 0, 0, 0, 1, 0, 0},  
    {1, 0, 0, 0, 0, 1, 0, 0},  
    {1, 0, 0, 0, 0, 1, 0, 0},  
};
```

```

    {1, 0, 0, 0, 0, 1, 0, 0}
};

void draw_char_A( int x, int y, int color) {

    for (int i = 0; i < 12; i++) {
        for (int j = 0; j < 8; j++) {
            if (bitmap_A[i][j] == 1) {
                putpixel(x + j, y + i, color);
            }
        }
    }
}

int main() {
    int gd = DETECT, gm;
    initgraph(&gd, &gm, "");

    // Draw the letter 'A' at (100, 100) in red
    draw_char_A( 100, 100, WHITE);

    getch();
    closegraph();
    return 0;
}

```



#### 4. Outline font.

Code:

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

```
// Define a bitmap font for the letter 'A'
int bitmap_A[17][12] =
{
    {1, 1,1, 1, 1, 1, 1, 1,1,1,1, 0},
    {1, 0,0, 0, 0, 0, 0, 0,0,0,0, 1},
    {1, 0,0, 0, 0, 0, 0, 0,0,0,0, 1},
    {1, 0,0, 0, 0, 0, 0, 0,0,0,0, 1},
    {1, 0,0, 0, 0, 0, 0, 0,0,0,0, 1},
    {1, 0,0, 0, 0, 0, 0, 0,0,0,0, 1},
    {1, 0, 1, 1, 1, 1, 1, 1,1,1,1, 0},
    {1, 0, 1, 0, 0, 0, 0, 0,0,0,0, 0},
    {1, 0,1, 0, 0, 0, 0, 0,0,0,0, 0},
    {1, 0,1, 0, 0, 0, 0, 0,0,0,0, 0},
    {1, 0,1, 0, 0, 0, 0, 0,0,0,0, 0},
    {1, 0,1, 0, 0, 0, 0, 0,0,0,0, 0},
    {1, 0,1, 0, 0, 0, 0, 0,0,0,0, 0},
    {1, 0,1, 0, 0, 0, 0, 0,0,0,0, 0},
    {1, 0,1, 0, 0, 0, 0, 0,0,0,0, 0},
    {1, 0,1, 0, 0, 0, 0, 0,0,0,0, 0},
    {1, 1,1, 0, 0, 0, 0, 0,0,0,0, 0}
};
```

```
void draw_char_A( int x, int y, int color)
{
    for (int i = 0; i < 17; i++)
    {
        for (int j = 0; j < 12; j++)
        {
            if (bitmap_A[i][j] == 1)
            {
                putpixel(x + j, y + i, color);
            }
        }
    }
}
```

```
}
```

```
int main()
```

```
{
```

```
    int gd = DETECT, gm;
```

```
    initgraph(&gd, &gm, "");
```

```
    // Draw the letter 'A' at (100, 100) in red
```

```
    draw_char_A( 100, 100, WHITE);
```

```
    getch();
```

```
    closegraph();
```

```
    return 0;
```

```
}
```

