

## Lab Report: 04

# Implementation of Bresenham Line Drawing Algorithm (For All Cases)

**Title: Drawing a Line Using Bresenham Algorithm in OpenGL**

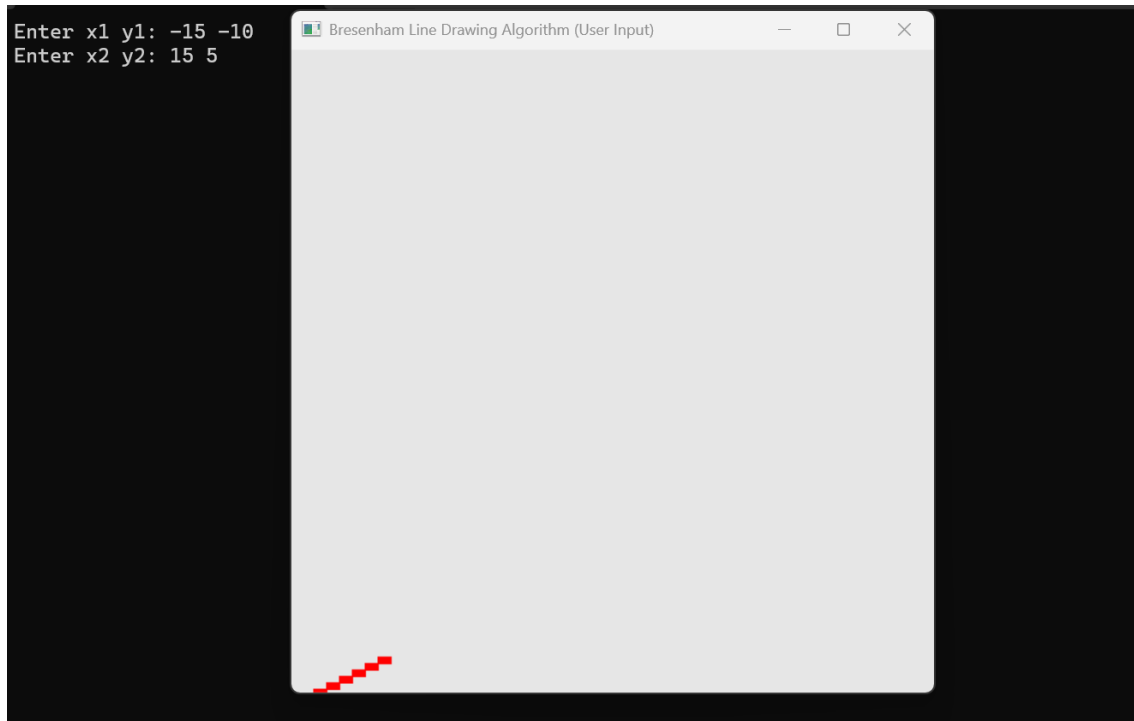
### Introduction:

In this project, a line is drawn using the Bresenham algorithm. The algorithm draws a line using user input coordinates.

### Contents:

- **Functions Used:** `drawLineBresenham()`, `glVertex2i()`, `glBegin()`, `glColor3f()`
- **Shape Used:** Line

### Graph:



Draw X and Y axis. Mark the two input points and join them with a line.

**Code (Drawing Portion Only):**

```
void drawLineBresenham(int x1, int y1, int x2, int y2)
{
    int dx = x2 - x1;
    int dy = y2 - y1;
    int p = 2 * dy - dx;
    int x = x1;
    int y = y1;

    glBegin(GL_POINTS);
    while (x <= x2)
    {
        glVertex2i(x, y);

        if (p < 0)
            p = p + 2 * dy;
        else
        {
            y = y + 1;
            p = p + 2 * dy - 2 * dx;
        }
        x = x + 1;
    }
    glEnd();
}
```

**Discussion:**

The task was to draw a line using Bresenham algorithm. I used decision parameter to plot points between two coordinates.