VIT Vidyalankar Institute of Technology ACCREDITED A+ BY NAAC	Department of Computer Engineering

Semester	S.E. Semester IV – CMPN
Division & Batch	Div C Batch 1
Subject	Computer Graphics
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Laboratory	M310A

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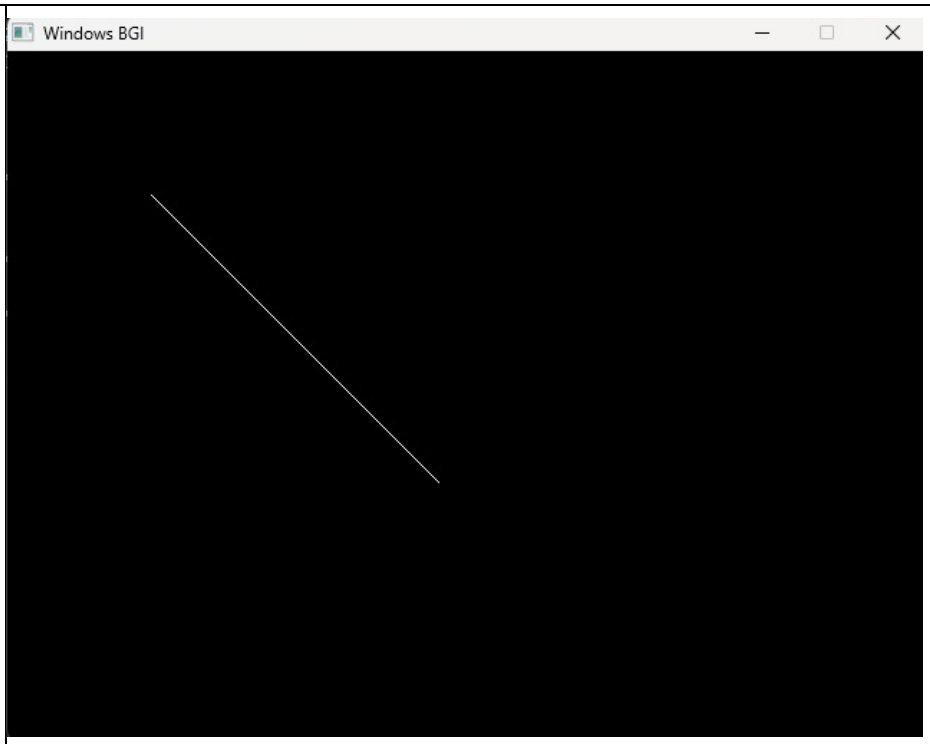
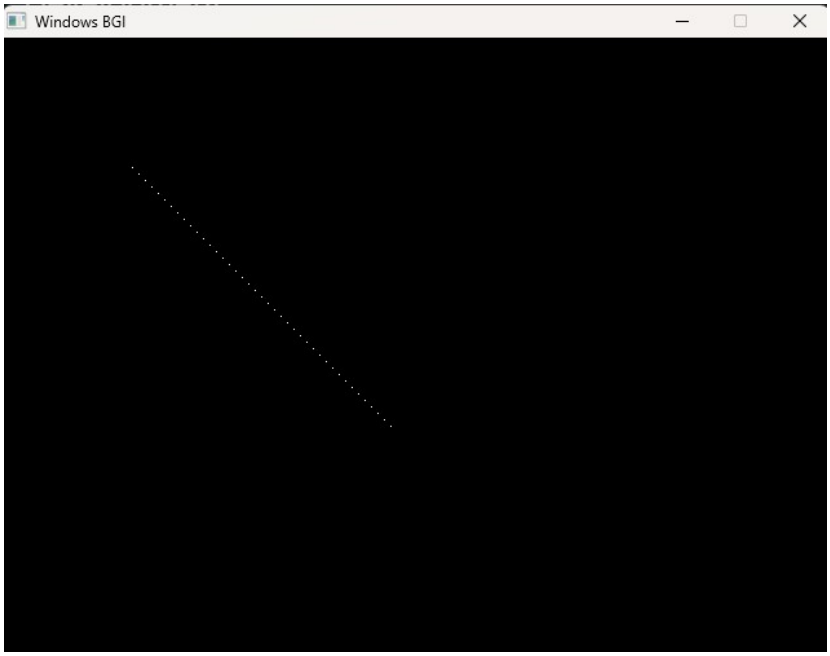
Grade and Subject Teacher's Signature		

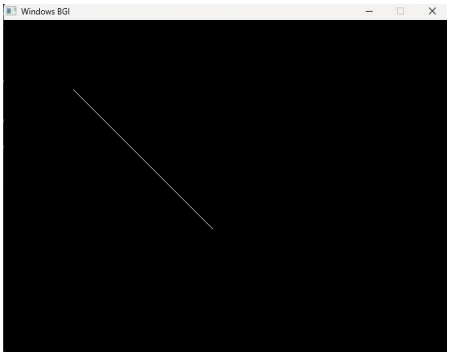
Experiment Number	2	
Experiment Title	**Implementation of Bresenham's line drawing algorithm**	
Problem Statement	Draw lines which are of different types like: Solid Dashed Dotted	
Resources / Apparatus Required	Hardware: Desktop	Software: Dev C++

Code

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

void bresenham(int x1, int y1, int x2, int y2) {
    int dx, dy, x = x1, y = y1;
    int p;
    int i=0;

    dx = x2 - x1;
    dy = y2 - y1;

    p = 2 * dy - dx;

    while (x <= x2) {
        if((x % 10) < 5)
        {
            putpixel(x, y, WHITE);
        }

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

int main() {
    int x1, y1, x2, y2;
    int gd = DETECT, gm;

    printf("Enter the coords of first point (x1 y1): ");
    scanf("%d %d", &x1, &y1);

    printf("Enter the coords of 2nd point (x2 y2): ");
    scanf("%d %d", &x2, &y2);

    initgraph(&gd, &gm, (char*)"");

    bresenham(x1, y1, x2, y2);

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


Windows BGI


Windows BGI


Windows BGI

Conclusion	In this experiment, Bresenham's line drawing algorithm was used to draw a straight line on the screen by plotting pixels one by one. By skipping pixels at regular intervals, dashed and dotted lines were successfully generated from the same algorithm. The output confirms that line alignment follows the screen coordinate system with the origin at the top-left corner, making the algorithm efficient and suitable for basic computer graphics applications.