

Assignment - 1

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Subject : Computer Graphics

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Write a program to implement line drawing algorithm using switch case

1. DDA

2. Bresenham's

1.DDA

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

void drawQuardinates(){
    line(0,getmaxy()/2,getmaxx(),getmaxy()/2);
    line(getmaxx()/2,0,getmaxx()/2,getmaxy());
}

int main()
{
    int gd = DETECT, gm;
    int dx, dy, p, i, end, SA;
    float x1, x2, y1, y2, x, y, step;

    printf("Enter Value of X1: ");
    scanf("%f", &x1);
    printf("Enter Value of Y1: ");
    scanf("%f", &y1);
    printf("Enter Value of X2: ");
    scanf("%f", &x2);
    printf("Enter Value of Y2: ");
    scanf("%f", &y2);

    printf("\n1) DDA - Line drawing algorithm \n2) Bresenham's Line drawing
algorithm\n\nSelect a Option : ");
    scanf("%d", &SA);
```

```

initgraph(&gd, &gm, NULL);
drawQuardinates();

dx = abs(x1 - x2);
dy = abs(y1 - y2);

switch (SA)
{
case 1:
    p = 2 * dy - dx;
    if (x1 > x2)
    {
        x = x2;
        y = y2;
        end = x1;
    }
    else
    {
        x = x1;
        y = y1;
        end = x2;
    }
    putpixel(getmaxx()/2 + x, getmaxy()/2 - y, 10);
    while (x < end)
    {
        x = x + 1;
        if (p < 0)
        {
            p = p + 2 * dy;
        }
        else
        {
            y = y + 1;
            p = p + 2 * (dy - dx);
        }
        putpixel(getmaxx()/2 + x, getmaxy()/2 - y, 10);
    }
    break;
case 2:

```

```

    if (dx >= dy)
        step = dx;
    else
        step = dy;

    dx = dx / step;
    dy = dy / step;

    x = x1;
    y = y1;

    i = 1;
    while (i <= step)
    {
        putpixel(getmaxx()/2 + x, getmaxy()/2 - y, 5);
        x = x + dx;
        y = y + dy;
        i = i + 1;
    }
}
getch();
closegraph();
return 0;
}

```

```

sumit at DESKTOP-7CN97S4 in /c/users/sumit/msys_2/IIITSURAT/CG on main
± g++ ASS1/ass1-1.cpp `libgraph` && ./a.exe
Enter Value of X1: 100
Enter Value of Y1: 100
Enter Value of X2: 200
Enter Value of Y2: 200

1) DDA - Line drawing algorithm
2) Bresenhams Line drawing algorithm
Select a Option : 1

```

