**Name: Niranjan Vinod Patil.**

**Batch: B-3.**

**Roll No: SCETTY305.**

# Subject: Computer Graphics & Gaming Lab

**Theory Assignment No: 01**

## Write a program for DDA line drawing algorithm. Also draw one shape using DDA line algorithm

#include<GL/glut.h>

#include<GL/gl.h>

#include<stdio.h>

float x1,x2,y1,y2;

float x3,y3,x4,y4;

void dda(float x1, float y1,float x2, float y2)

{

glClear(GL\_COLOR\_BUFFER\_BIT);

glBegin(GL\_POINTS);

glColor3f(0.0f,1.0f,0.0f);

float dx, dy, len,i,xinc,yinc;

dx=abs(x2-x1);

dy=abs(y2-y1);

if(dx>=dy)

len = dx;

else

len = dy;

xinc=(x2-x1)/len;

yinc=(y2-y1)/len;

for(i=0; i<=len; i++)

{

x1=x1+xinc;

y1=y1+yinc;

glVertex2f(x1,y1);

}

}

void display(void)

{

dda(x1,y1,x2,y1);

dda(x2,y1,x2,y2);

dda(x2,y2,x1,y2);

dda(x1,y2,x1,y1);

dda((x1+x2)/2,y1,x2,(y1+y2)/2);

dda(x2,(y1+y2)/2,(x1+x2)/2,y2);

dda((x1+x2)/2,y2,x1,(y1+y2)/2);

dda(x1,(y1+y2)/2,(x1+x2)/2,y1);

//dda((x1+x2)/4,(y1+y2)/3,(x1+x2)\*3/4,(y1+y2)/4);

dda(((x1+x2)/2+y1)/2,(x2+(y1+y2)/2)/2,(x2+(y1+y2)/2)/2,((x1+x2)/2+y2)/2);

dda((x2+(y1+y2)/2)/2,((x1+x2)/2+y2)/2,((x1+x2)/2+y2)/2,(x1+(y1+y2)/2)/2);

dda(((x1+x2)/2+y2)/2,(x1+(y1+y2)/2)/2,((x1+x2)/2+y2)/2,(x1+(y1+y2)/2)/2);

dda(((x1+x2)/2+y2)/2,(x1+(y1+y2)/2)/2,(x1+(y1+y2)/2)/2,((x1+x2)/2+y1)/2);

dda((x1+(y1+y2)/2)/2,((x1+x2)/2+y1)/2,((x1+x2)/2+y1)/2,(x2+(y1+y2)/2)/2);

//dda(x1,y1,x2,y2);

//dda(x1,y2,x2,y1);

glEnd();

glFlush();

}

void Init()

{

glClearColor(1.0,1.0,1.0,0);

glColor3f(0.0,0.0,0.0);

gluOrtho2D(0, 500, 0, 500);

}

int main(int argc, char \*argv[]){

printf("Enter the value of x1,y1");

scanf("%f",&x1);

scanf("%f",&y1);

printf("Enter the value of x2,y2");

scanf("%f",&x2);

scanf("%f",&y2);

glutInit(&argc, argv);

glutInitWindowSize(500,500);

glutInitWindowPosition(100,100);

glutCreateWindow("WIND");

Init();

glutDisplayFunc(display);

glutMainLoop();

return 0;

}

OUTPUT:

