**Assignment no: 09**

**//Write a C/C++ program to draw a convex polygons (Square, Rectangle, Triangle) using programmable edges.**

#include<iostream>

#include<graphics.h>

using namespace std;

class dline

{

protected: int x1,y1,x2,y2;

public:

dline()

{

x1=0,y1=0,x2=0,y2=0;

}

void drawl()

{

float x,y,dx,dy,len;

int i;

dx=abs(x2-x1);

dy=abs(y2-y1);

if(dx >= dy)

{

len=dx;

}

else

{

len=dy;

}

dx=(x2-x1)/len;

dy=(y2-y1)/len;

x = x1 + 0.5;

y = y1 + 0.5;

i=1;

while(i<=len)

{

putpixel(x,y,15);

x = x + dx;

y = y + dy;

i = i + 1;

}

putpixel(x,y,15);

}

};

class poly: public dline //poly

{

private: int a[10][2],p;

public:

void setpts(int i)

{

int j;

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

{

cout<<"\n Enter x-coordinate: "<<j<<":";cin>>a[j][0];

cout<<"\n Enter y-coordinate: "<<j<<":";cin>>a[j][1];

}

}

void drawpoly(int i)

{

int j;

x1=a[0][0];

y1=a[0][1];

x2=a[1][0];

y2=a[1][1];

dline::drawl();

for(j=0;j<i-1;j++)

{

x1=a[j][0];

y1=a[j][1];

x2=a[j+1][0];

y2=a[j+1][1];

dline::drawl();

}

x1=a[j][0];

y1=a[j][1];

x2=a[0][0];

y2=a[0][1];

dline::drawl();

}

};

int main()

{

int n ,gd=DETECT,gm=VGAMAX;

initgraph(&gd,&gm,NULL);

poly shape;

cout<<"\nEnter number of slides: "; cin>>n;

shape.setpts(n);

shape.drawpoly(n);

delay(3000);

getch();

closegraph();

return 0;

}