ASSIGNMENT NO 1

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```cpp
#include<iostream>
#include<graphics.h>
#include<math.h>
using namespace std;
class line_1
{
public:
void drawline(int x1,int y1,int x2, int y2)
{
line(x1,y1,x2,y2);
}
};
class polygon1:public line_1
{
int n,i,j,b[10][10],inx[10];
float dx,dy,m[10];
int ymin,ymax,y,temp;
public:
polygon1()
{
ymin=480;
ymax=0;
for(int i=0;i<10;i++)
m[i]=0;
}
void accept()
{
cout<<"enter the no. of sides:";
cin>>n;//n=7
cout<<"enter the coordinates::";
for(i=0;i<n;i++)
{
for(j=0;j<2;j++)
{
cin>>b[i][j];
}
if(b[i][1]>ymax)
ymax=b[i][1];
if(b[i][1]<ymin)
ymin=b[i][1];

}
b[i][0]=b[0][0];
b[i][1]=b[0][1];
}

void find()
```

```
{
for(i=0;i<n;i++)
{
line(b[i][0],b[i][1],b[i+1][0],b[i+1][1]);
dx=b[i+1][0]-b[i][0];//X2-X1
dy=b[i+1][1]-b[i][1];//Y2-Y1
if(dx==0)
m[i]=0;
if(dy==0)
m[i]=1;
if(dx!=0 && dy!=0)
m[i]=float(dx/dy);
}
}

void scanline()
{
for(y=ymax;y>=ymin;y--)   // (y=ymin;y<=ymax;y++)
{
int count =0;
for(int i=0;i<n;i++)
{
if((b[i][1]>y && b[i+1][1]<=y)||(b[i][1]<=y && b[i+1][1]>y))
{
inx[count]=b[i][0]+(m[i]*(y-b[i][1]));
count++;
}
}
for(int k=0;k<count-1;k++)
{
for(int i=0;i<count-1;i++)
{
if(inx[i]>inx[i+1])
{
temp=inx[i];
inx[i]=inx[i+1];
inx[i+1]=temp;
}
}
}
setcolor(RED);
for(int i=0;i<count-1;i=i+2)
{
drawline(inx[i],y,inx[i+1],y);
delay(10);
}
}
}
};
int main()
{
int gd=DETECT,gm;
```

```
polygon1 p;
p.accept();
initgraph(&gd,&gm,NULL);
p.find();
p.scanline();
getch();
closegraph();
return 0;
}
```