```
#include <iostream>
#include <graphics.h>
#include <stdlib.h>
using namespace std;
class point
{
   public:
   int x,y;
};
class poly
{
   private:
      point p[20];
      int inter[20],x,y;
      int v,xmin,ymin,xmax,ymax;
   public:
      int c;
      void read();
      void calcs();
      void display();
      void ints(float);
      void sort(int);
};
void poly::read()
{
   int i;
   cout<<"\n\t SCAN_FILL ALGORITHM";
   cout<<"\n Enter the no of vertices of polygon:";
   cin>>v;
   if(v>2)
   {
```

```
        for(i=0;i<v; i++)
        {
           cout<<"\nEnter the co-ordinate no.- "<<i+1<<" : ";
           cout<<"\n\tx"<<(i+1)<<"=";
           cin>>p[i].x;
           cout<<"\n\ty"<<(i+1)<<"=";
           cin>>p[i].y;
        }
        p[i].x=p[0].x;
        p[i].y=p[0].y;
        xmin=xmax=p[0].x;
        ymin=ymax=p[0].y;
    }
    else
        cout<<"\n Enter valid no. of vertices.";
}
void poly::calcs()
{
    for(int i=0;i<v;i++)
    {
        if(xmin>p[i].x)
        xmin=p[i].x;
        if(xmax<p[i].x)
        xmax=p[i].x;
        if(ymin>p[i].y)
        ymin=p[i].y;
        if(ymax<p[i].y)
        ymax=p[i].y;
    }
}
void poly::display()
```

```
{
   int ch,ch1;
   float s,s2;
   do
   {
      cout<<"\n\nMENU:";
      cout<<"\n\n\t1 . Scan line Fill ";
      cout<<"\n\n\t2 . Exit ";
      cout<<"\n\nEnter your choice: ";
      cin>>ch1;
      switch(ch1)
      {
         case 1:
            s=y
               s++;
            }
            break;
         case 2:
         {
            x=((x2-x1)*(z-y1))/(y2-y1);
            x=x+x1;
         }
         if(x<=xmax && x>=xmin)
         inter[c++]=x;
      }
   }
}
void poly::sort(int z)
{
   int temp,j,i;
```

```
        for(i=0;i<v;i++)
        {
           line(p[i].x,p[i].y,p[i+1].x,p[i+1].y);
        }
        delay(100);
        for(i=0; i<c;i+=2)
        {
           delay(100);
           line(inter[i],z,inter[i+1],z);
        }
}
int main()
{
   int cl;
   int gd=DETECT,gm;
   initgraph(&gd,&gm,NULL);
   cleardevice();
   poly x;
   x.read();
   x.calcs();
   cleardevice();
   cout<<"\n\tEnter the colour u want:(0-15)->";
   cin>>cl;
   setcolor(cl);
   x.display();
   closegraph();
   getch();
   return 0;
}
```