**Assignment no. 1**

**Subject -: computer graphics .**

**Faculty : Prof. Priyanka ma’am**

**1.line drawing and circle drawing .**

**Problem :**

**#include<iostream>**

**#include<graphics.h>**

**#include<math.h>**

**using namespace std;**

**class figure**

**{**

**float length,delx,dely;**

**int d ,h,xc,yc;**

**public:**

**void drawline(float x1,float y1,float x2,float y2)**

**{**

**float xinc,yinc,dx,dy,steps;**

**dx=x2-x1;**

**dy=y2-y1;**

**if(abs(dx)>abs(dy))**

**steps=abs(dx);**

**else**

**steps=abs(dy);**

**xinc=dx/steps;**

**yinc=dy/steps;**

**for(int i=0;i<steps;i++)**

**{**

**putpixel(x1,y1,WHITE);**

**x1=x1+xinc;**

**y1=y1+yinc;**

**}**

**}**

**void drawcircle(int r ,int xc , int yc)**

**{**

**int x,y;**

**d=3-2\*r;**

**x=0;**

**y=r;**

**do**

**{**

**putpixel(x+xc ,y+yc,WHITE);**

**putpixel(y+xc ,x+yc,WHITE);**

**putpixel(y+xc ,-x+yc,WHITE);**

**putpixel(x+xc ,-y+yc ,WHITE);**

**putpixel(-x+xc ,-y+yc,WHITE);**

**putpixel(-y+xc ,-x+yc,WHITE);**

**putpixel(-x+xc ,y+yc,WHITE);**

**putpixel(-y+xc ,x+yc,WHITE);**

**if(d<0){**

**d=d+4\*x+6;**

**x=x+1;**

**}**

**else{**

**d=d+4\*(x-y)+10;**

**y=y-1;**

**x=x+1;**

**}**

**}while(x<=y);**

**}**

**void fig(float x11 ,float y11 ,float length)**

**{**

**h=(sqrt(3\*length\*length))/2;**

**drawline(x11,y11,x11+length,y11);**

**drawline(x11+length,y11,x11+(length)/2 ,y11-h);**

**drawline(x11,y11,x11+(length)/2,y11-h);**

**drawcircle(2\*h/3,x11+(length)/2,y11-(h/3));**

**drawcircle(h/3 ,x11+(length)/2 ,y11-(h/3));**

**}**

**};**

**int main()**

**{**

**figure f1;**

**float x1 ,y1 ,length;**

**cout<<"give the starting "<<endl;**

**cin>>x1>>y1;**

**cout<<"Enter a length of give line :"<<endl;**

**cin>>length;**

**int gd=DETECT ,gm;**

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

**f1.fig(x1 ,y1,length);**

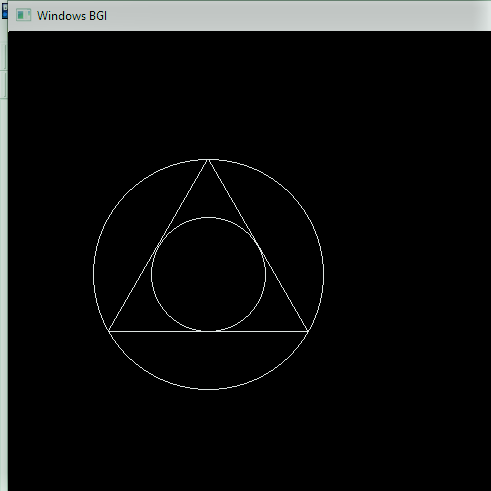
**getch();**

**closegraph();**

**return 0;**

**}**

**Output :**

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