SE CMPN A Roll no:30

/\*Program to implement Ellipse using Midpoint Ellipse Algorithm\*/

import java.util.\*;

import java.applet.Applet;

import java.awt.\*;

/\*<applet code="Ellipse1.class" width=500 height=500>

</applet>\*/

public class Ellipse1 extends Applet

{

int rx,ry,x,y,xc,yc;

float dx,dy,d1;

double d2;

public void init()

{

Scanner sc=new Scanner(System.in);

System.out.println("Enter the x-coordinate");

xc=sc.nextInt();

System.out.println("Enter the y-coordinate");

yc=sc.nextInt();

System.out.println("enter values of rx,ry");

rx=sc.nextInt();

ry=sc.nextInt();

}

public void paint(Graphics g)

{

x=0;

y=ry;

d1=(ry\*ry)-((rx\*rx)\*ry)+((rx\*rx)/4);

dx=2\*ry\*ry\*x;

dy=2\*rx\*rx\*y;

do

{

g.setColor(Color.black);

g.drawLine((int)x+200,(int)y+200,(int)x+200,(int)y+200);

g.drawLine((int)-x+200,(int)-y+200,(int)-x+200,(int)-y+200);

g.drawLine((int)x+200,(int)-y+200,(int)x+200,(int)-y+200);

g.drawLine((int)-x+200,(int)y+200,(int)-x+200,(int)y+200);

if(d1<0)

{

x=x+1;

y=y;

dx=dx+(2\*ry\*ry);

d1=d1+dx+(ry\*ry);

}

else

{

x=x+1;

y=y-1;

dx=dx+(2\*ry\*ry);

dy=dy-(2\*rx\*rx);

d1=d1+dx-dy+(ry\*ry);

}

}while(dx<dy);

d2=((ry\*ry)\*(x+(1/2))\*(x+(1/2)))+((rx\*rx)\*(y-1)\*(y-1))-(rx\*rx\*ry\*ry);

do

{

g.drawLine((int)x+200,(int)y+200,(int)x+200,(int)y+200);

g.drawLine((int)-x+200,(int)-y+200,(int)-x+200,(int)-y+200);

g.drawLine((int)x+200,(int)-y+200,(int)x+200,(int)-y+200);

g.drawLine((int)-x+200,(int)y+200,(int)-x+200,(int)y+200);

if(d2>0)

{

x=x;

y=y-1;

dy=dy-(2\*rx\*rx);

d2=d2-dy+(rx\*rx);

}

else

{

x=x+1;

y=y-1;

dx=dx+(2\*ry\*ry);

dy=dy-(2\*rx\*rx);

d2=d2+dx-dy+(rx\*rx);

}

}while(y>0);

g.setColor(Color.yellow);

g.fillArc((int)(200-rx),(int)(200-ry),(int)(2\*rx),(int)(2\*ry),0,90);

g.setColor(Color.green);

g.fillArc((int)(200-rx),(int)(200-ry),(int)(2\*rx),(int)(2\*ry),90,270);

g.setColor(Color.red);

g.fillArc((int)(200-rx),(int)(200-ry),(int)(2\*rx),(int)(2\*ry),270,90);

g.setColor(Color.blue);

g.fillArc((int)(200-rx),(int)(200-ry),(int)(2\*rx),(int)(2\*ry),-270,90);

}

}

/\* output:-

D:\Flevia 30>javac Ellipse1.java

D:\Flevia 30>appletviewer Ellipse1.java

Enter the x-coordinate

50

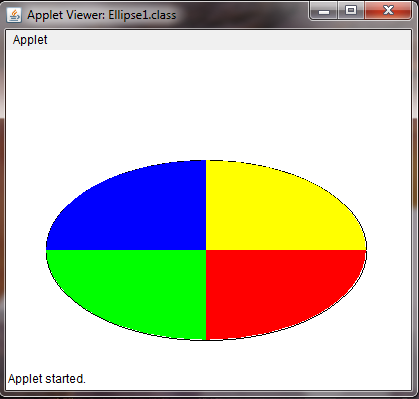
Enter the y-coordinate

50

enter values of rx,ry

160

90



\*/