

```

#include <iostream>

#include <graphics.h>

using namespace std;

class DDA
{
int x1,y1,x2,y2;

public:
DDA(int xx1,int yy1,int xx2,int yy2)
{
x1=xx1;
y1=yy1;
x2=xx2;
y2=yy2;
}

void read(){
cout<<"Enter x and y coordinates of start point:: ";
cin>>x1>>y1;
cout<<"Enter x and y coordinates of end point:: ";
cin>>x2>>y2;
}

void drawline();
};

void DDA::drawline()
{
float dx=x2-x1;
float dy=y2-y1;
float length;
if (abs(dx)>=abs(dy))
length=abs(dx);
else
length = abs(dy);

```

```

float xi=dx/length;
float yi=dy/length;
float x=x1;
float y=y1;
for(int i=1;i<=length;i++)
{
    putpixel(x,y,WHITE);
    x+=xi;
    y+=yi;
}
}

class BCA
{
    int r,xc,yc;
public:
    BCA(int rr,int x1, int y1)
    {
        r=rr;
        xc=x1;
        yc=y1;
    }
    void read()
    {
        cout <<"Enter the radius: ";
        cin >> r;
        cout <<"Enter the x and y coordinates: ";
        cin >> xc>>yc;
    }
    void drawCircle();
    void plot8WaySymmetry(int,int);
};

```

```

void BCA::plot8WaySymmetry(int x,int y)
{
    putpixel(x+xc,y+yc,WHITE);
    putpixel(y+yc,x+xc,WHITE);
    putpixel(xc-x,y+yc,WHITE);
    putpixel(y+yc,xc-x,WHITE);
    putpixel(x+xc,yc-y,WHITE);
    putpixel(yc-y,x+xc,WHITE);
    putpixel(xc-x,yc-y,WHITE);
    putpixel(yc-y,xc-x,WHITE);
}

void BCA::drawCircle(){
    int x=0,y=r;
    int d=3-2*r;
    putpixel(xc,yc,WHITE);
    while(x<=y){
        if (d<=0){
            d+=4*x+6;

            x++;
        }
        else{
            d+=4*(x-y)+10;
            x++;
            y--;
        }
        plot8WaySymmetry(x,y);
    }
}

int main()
{
    int gd = DETECT, gm;

```

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

// To draw first shape

BCA circle1(50,120,120),circle2(100,120,120);

DDA line1(34,170,120,20),line2(206,170,120,20),line3(206,170,30,170);

circle1.drawCircle();

circle2.drawCircle();

line1.drawline();

line2.drawline();

line3.drawline();

// To draw second shape

BCA Circle1(45,350,350);

DDA
Line1(250,300,450,300),Line2(450,300,450,400),Line3(450,400,250,400),Line4(250,400,250,300);

DDA
Line5(350,300,450,350),Line6(450,350,350,400),Line7(350,400,250,350),Line8(250,350,350,300);

Circle1.drawCircle();

Line1.drawline();

Line2.drawline();

Line3.drawline();

Line4.drawline();

Line5.drawline();

Line6.drawline();

Line7.drawline();

Line8.drawline();

getch();

closegraph();

return 0;

}
```