***//13. Horizontal Ellipse With Both Axis//***

#include <stdio.h>

#include<conio.h>

#include<math.h>

#include <dos.h>

#include <graphics.h>

void ellipseMidpoint(float, float, float, float);

void drawEllipse(float, float, float, float);

void main()

{

float xc, yc, rx, ry;

int gd = DETECT, gm;

initgraph(&gd, &gm, "c:\\turboc3\\bgi");

ellipseMidpoint(220,240,120,60);

line(220,240,220,181);

line(338,240,220,240);

getch();

}

void ellipseMidpoint(float xc, float yc, float rx, float ry)

{

float rxSq = rx \* rx;

float rySq = ry \* ry;

float x = 0, y = ry, p;

float px = 0, py = 2 \* rxSq \* y;

drawEllipse(xc, yc, x, y);

p = rySq - (rxSq \* ry) + (0.25 \* rxSq);

while (px < py)

{

x++;

px = px + 2 \* rySq;

if (p < 0)

p = p + rySq + px;

else

{

y--;

py = py - 2 \* rxSq;

p = p + rySq + px - py;

}

drawEllipse(xc, yc, x, y);

delay(30);

}

p = rySq\*(x+0.5)\*(x+0.5) + rxSq\*(y-1)\*(y-1) - rxSq\*rySq;

while (y > 0)

{

y--;

py = py - 2 \* rxSq;

if (p > 0)

p = p + rxSq - py;

else

{

x++;

px = px + 2 \* rySq;

p = p + rxSq - py + px;

}

drawEllipse(xc, yc, x, y);

delay(30);

}

}

void drawEllipse(float xc, float yc, float x, float y)

{

putpixel(xc+x, yc+y, 15);

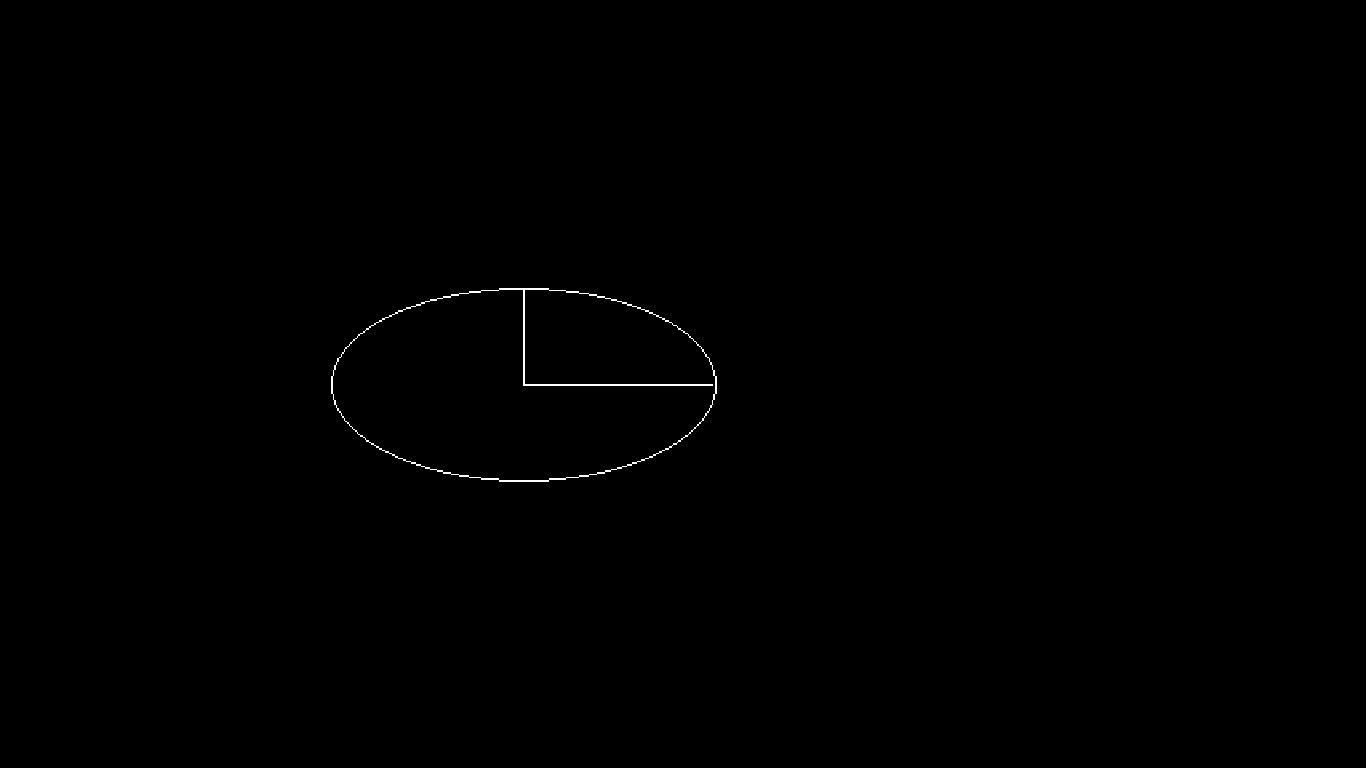
putpixel(xc-x, yc+y, 15);

putpixel(xc+x, yc-y, 15);

putpixel(xc-x, yc-y, 15);

}

***Output:***

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