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**Roll: 2K19/CO/450**

**Subject : Java Lab**

**Group : G3**

**Date :17/09/2021**

**LAB ASSIGNMENT 03**

**WAP to implement Mid Point Ellipse drawing Algorithm.**

**Code:**

#include<graphics.h>

#include<stdlib.h>

#include<iostream>

#include<conio.h>

int main()

{

int gd = DETECT, gm;

int xc,yc,x,y;float p;

long rx,ry;

initgraph(&gd, &gm, (char\*)"");

std::cout<<"\nEnter coordinates of centre : ";

std::cin>>xc>>yc;

std::cout<<"Enter x,y radius of ellipse: ";

std::cin>>rx>>ry;

//Region 1

p=ry\*ry-rx\*rx\*ry+rx\*rx/4;

x=0;y=ry;

while(2.0\*ry\*ry\*x <= 2.0\*rx\*rx\*y)

{

if(p < 0)

{

x++;

p = p+2\*ry\*ry\*x+ry\*ry;

}

else

{

x++;y--;

p = p+2\*ry\*ry\*x-2\*rx\*rx\*y-ry\*ry;

}

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

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

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

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

}

//Region 2

p=ry\*ry\*(x+0.5)\*(x+0.5)+rx\*rx\*(y-1)\*(y-1)-rx\*rx\*ry\*ry;

while(y > 0)

{

if(p <= 0)

{

x++;y--;

p = p+2\*ry\*ry\*x-2\*rx\*rx\*y+rx\*rx;

}

else

{

y--;

p = p-2\*rx\*rx\*y+rx\*rx;

}

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

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

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

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

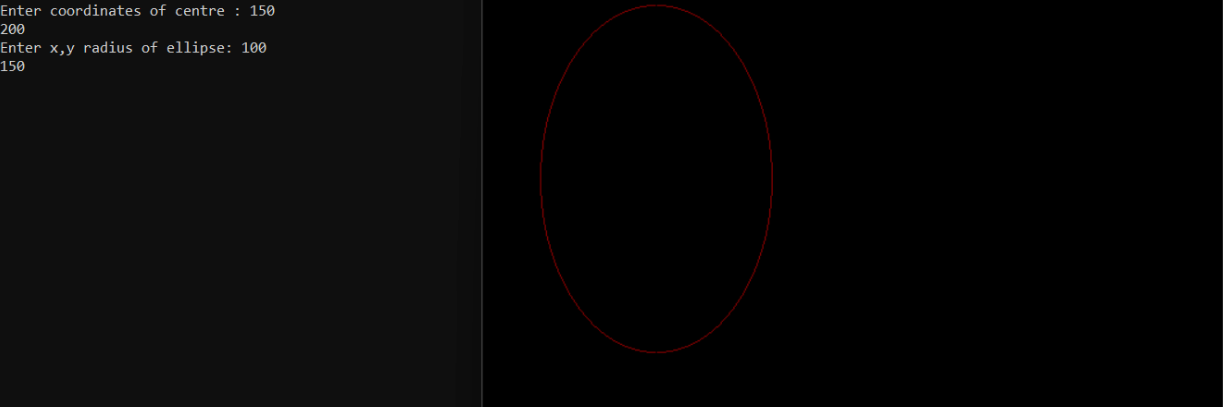
}

getch();

closegraph();

}

**Output:**

****