**LAB Assignment-02**

*Course title: Computer Graphics Laboratory*

*Course code: CSE-304*

*3nd  Year 1st Semester Examination 2022*

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**Submitted to-**

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| **Sl** | Class Roll | Exam Roll | Name |
| 01 | **385** |  | **Md.Soad Anam** |

**Experiment No. : 01**

**Experiment Title : Scan conversion of a circle using midpoint**

**Source Code:**

#include<graphics.h>

#include<conio.h>

#include<stdio.h>

#include<bits/stdc++.h>

using namespace std;

int main()

{

int x,y,x\_mid,y\_mid,radius,dp;

int g\_mode,g\_driver=DETECT;

//clrscr();

initgraph(&g\_driver,&g\_mode,"C:\\TURBOC3\\BGI");

printf("\*\*\*\*\*\*\*\*\*\*\* MID POINT Circle drawing algorithm \*\*\*\*\*\*\*\*\n\n");

printf("\nenter the coordinates= ");

scanf("%d %d",&x\_mid,&y\_mid);

printf("\n now enter the radius =");

scanf("%d",&radius);

x=0;

y=radius;

dp=1-radius;

do

{

putpixel(x\_mid+x,y\_mid+y,RED);

putpixel(x\_mid+y,y\_mid+x,RED);

putpixel(x\_mid-y,y\_mid+x,RED);

putpixel(x\_mid-x,y\_mid+y,RED);

putpixel(x\_mid-x,y\_mid-y,RED);

putpixel(x\_mid-y,y\_mid-x,RED);

putpixel(x\_mid+y,y\_mid-x,RED);

putpixel(x\_mid+x,y\_mid-y,RED);

if(dp<0) {

dp+=(2\*x)+1;

}

else{

y=y-1;

dp+=(2\*x)-(2\*y)+1;

}

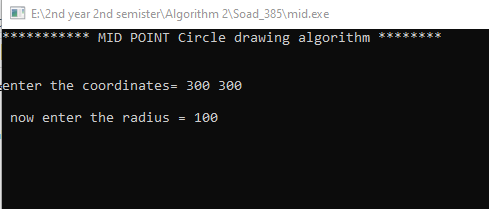
x=x+1;

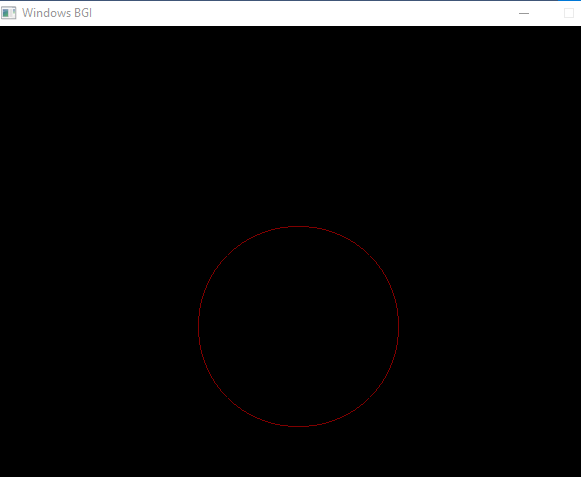
}while(y>x);

getch();

}

**Output:**

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**Fig: Scan conversion of a circle using midpoint**

**Experiment No. : 02**

**Experiment Title : Scan conversion of a Elipse.**

**Source Code:**

#include<stdio.h>

#include<conio.h>

#include<graphics.h>

#include<math.h>

#include<bits/stdc++.h>

using namespace std;

void disp();

float x,y;

int xc,yc;

int main()

{

int gd=DETECT,gm,a,b;

float p1,p2;

//clrscr();

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

printf("\*\*\* Ellipse Generating Algorithm \*\*\*\n");

printf("Enter the value of Xc\t");

scanf("%d",&xc);

printf("Enter the value of yc\t");

scanf("%d",&yc);

printf("Enter X axis length\t");

scanf("%d",&a);

printf("Enter Y axis length\t");

scanf("%d",&b);

x=0;y=b;

disp();

p1=(b\*b)-(a\*a\*b)+(a\*a)/4;

while((2.0\*b\*b\*x)<=(2.0\*a\*a\*y))

{

x++;

if(p1<=0)

p1=p1+(2.0\*b\*b\*x)+(b\*b);

else

{

y--;

p1=p1+(2.0\*b\*b\*x)+(b\*b)-(2.0\*a\*a\*y);

}

disp();

x=-x;

disp();

x=-x;

delay(50);

}

x=a;

y=0;

disp();

p2=(a\*a)+2.0\*(b\*b\*a)+(b\*b)/4;

while((2.0\*b\*b\*x)>(2.0\*a\*a\*y))

{

y++;

if(p2>0)

p2=p2+(a\*a)-(2.0\*a\*a\*y);

else

{

x--;

p2=p2+(2.0\*b\*b\*x)-(2.0\*a\*a\*y)+(a\*a);

}

disp();

y=-y;

disp();

y=-y;

delay(50);

}

getch();

closegraph();

}

void disp()

{

putpixel(xc+x,yc+y,7);

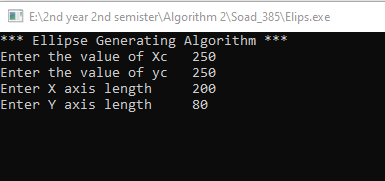
putpixel(xc-x,yc+y,7);

putpixel(xc+x,yc-y,7);

putpixel(xc+x,yc-y,7);

}

**Output:**

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**Fig: Scan conversion of a Elipse.**