Lab Report. 02

Title: Lab Report

Course title: Computer Graphics Lab

Course code: CSE-304

3rd Year 1st Semester 2022

Date of Submission: 04/06/2023

Submitted to-

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Experiment no. 05:

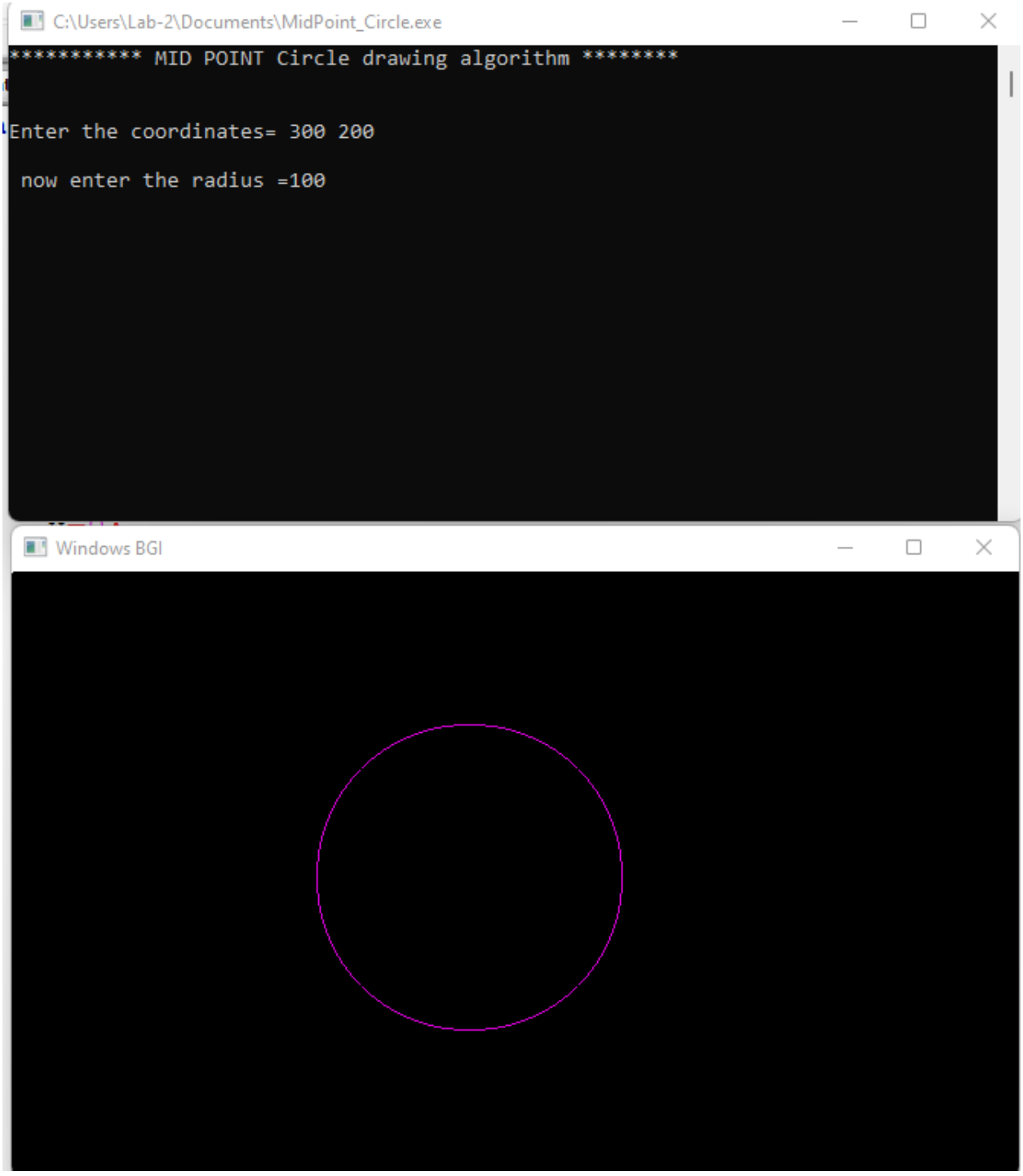
Name of the Experiment: Scan Conversion of a Circle using MidPoint Algorithm:

Source Code:

```
#include<conio.h>
#include<graphics.h>
#include<bits/stdc++.h>
using namespace std;
int main()
{
   int x,y,x_mid,y_mid,r,d;
   int g_mode,g_driver=DETECT;
   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",&r);
   x=0;
   y=r;
   d=1-r;
   do
   {
      putpixel(x_mid+x,y_mid+y,5);
```

```
        putpixel(x_mid+y,y_mid+x,5);
        putpixel(x_mid-y,y_mid+x,5);
        putpixel(x_mid-x,y_mid+y,5);
        putpixel(x_mid-x,y_mid-y,5);
        putpixel(x_mid-y,y_mid-x,5);
        putpixel(x_mid+y,y_mid-x,5);
        putpixel(x_mid+x,y_mid-y,5);
        if(d<0)
        {
           d+=(2*x)+1;
        }
        else
        {
           y=y-1;
           d+=(2*x)-(2*y)+1;
        }
        x = x+1;
     }
     while(y>x);
     getch();
}
```

Output:


C:\Users\Lab-2\Documents\MidPoint_Circle.exe
********** MID POINT Circle drawing algorithm ********
Enter the coordinates= 300 200
now enter the radius =100
Windows BGI

Experiment no. 06:

Name of the Experiment: Scan Conversion of an Ellipse.

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;
   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: