

Lab Report : 02



Title: Computer Graphics Lab
Course code: CSE-304
3rd Year 1st Semester

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Submitted to-

Prof. Dr. Mohammad Shorif Uddin <i>Professor</i> <i>Department of Computer</i> <i>Science and Engineering</i> <i>Jahangirnagar University</i> <i>Savar, Dhaka-1342</i>	Dr. Morium Akther <i>Associate Professor</i> <i>Department of Computer</i> <i>Science and Engineering</i> <i>Jahangirnagar University</i> <i>Savar, Dhaka-1342</i>
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Sl	Class Roll	Registration Number	Name
01	388	20200650758	Md.Tanvir Hossain Saon

Experiment No.05

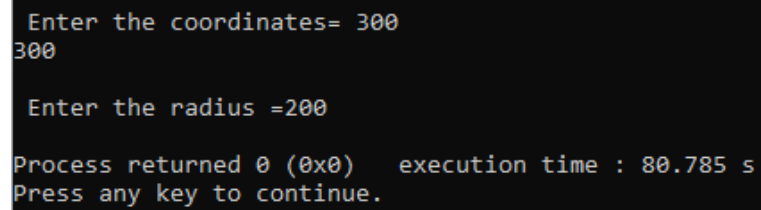
Scan Conversion of a circle using Mid Point Algorithm:

Source Code:

```
#include<graphics.h>
#include<conio.h>
#include<stdio.h>
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("\n Enter the coordinates= ");
    scanf("%d %d",&x_mid,&y_mid);
    printf("\n Enter the radius =");
    scanf("%d",&radius);
    x=0;
    y=radius;
    dp=1-radius;
    do
    {
        putpixel(x_mid+x,y_mid+y,GREEN);
        putpixel(x_mid+y,y_mid+x,GREEN);
        putpixel(x_mid-y,y_mid+x,GREEN);
        putpixel(x_mid-x,y_mid+y,GREEN);
        putpixel(x_mid-x,y_mid-y,GREEN);
        putpixel(x_mid-y,y_mid-x,GREEN);
        putpixel(x_mid+y,y_mid-x,GREEN);
        putpixel(x_mid+x,y_mid-y,GREEN);
        if(dp<0)
        {
            dp+=(2*x)+1;
        }
        else
        {
            y=y-1;
            dp+=(2*x)-(2*y)+1;
```

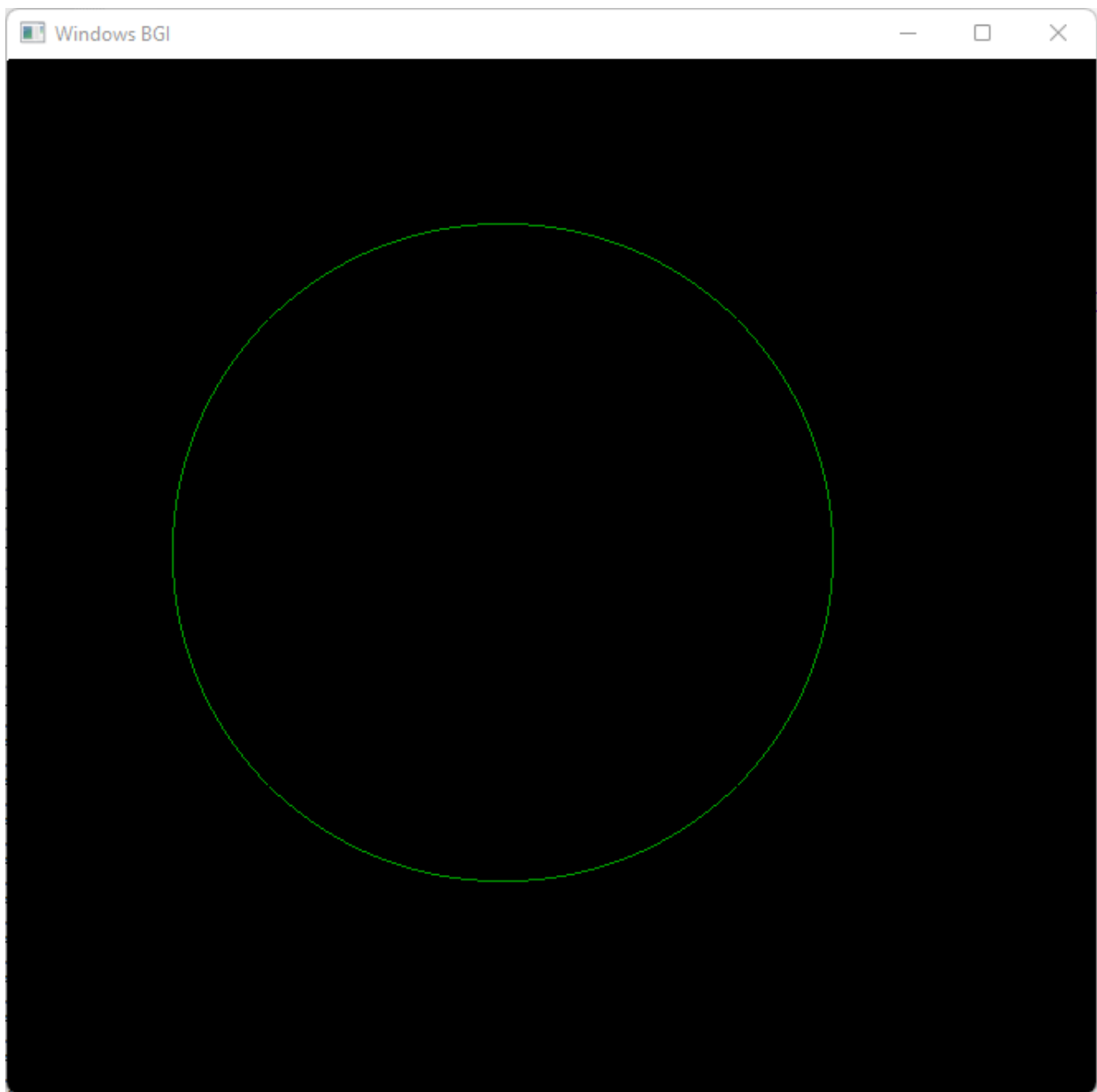
```
        }  
        x=x+1;  
    }  
    while(y>x);  
    getch();  
}
```

OUTPUT:



A screenshot of a terminal window with a black background and white text. The text shows the program's execution flow: it prompts for coordinates, receives the input '300', prompts for the radius, receives the input '200', and then displays the execution time and a message to press any key to continue.

```
Enter the coordinates= 300  
300  
  
Enter the radius =200  
  
Process returned 0 (0x0)   execution time : 80.785 s  
Press any key to continue.
```



Experiment No.06

Scan Conversion of a 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;
    //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:

```
*** Ellipse Generating Algorithm ***  
Enter the value of Xc  250  
Enter the value of yc  250  
Enter X axis length    200  
Enter Y axis length    80
```

