আন্তর্জাতিক ইসলামী বিশ্ববিদ্যালয় চট্টগ্রাম

الجامعة الإسلامية العالمية شيتاغونغ

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LAB - 5

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Course Code : CSE-4742

Course Title : Computer Graphics Lab

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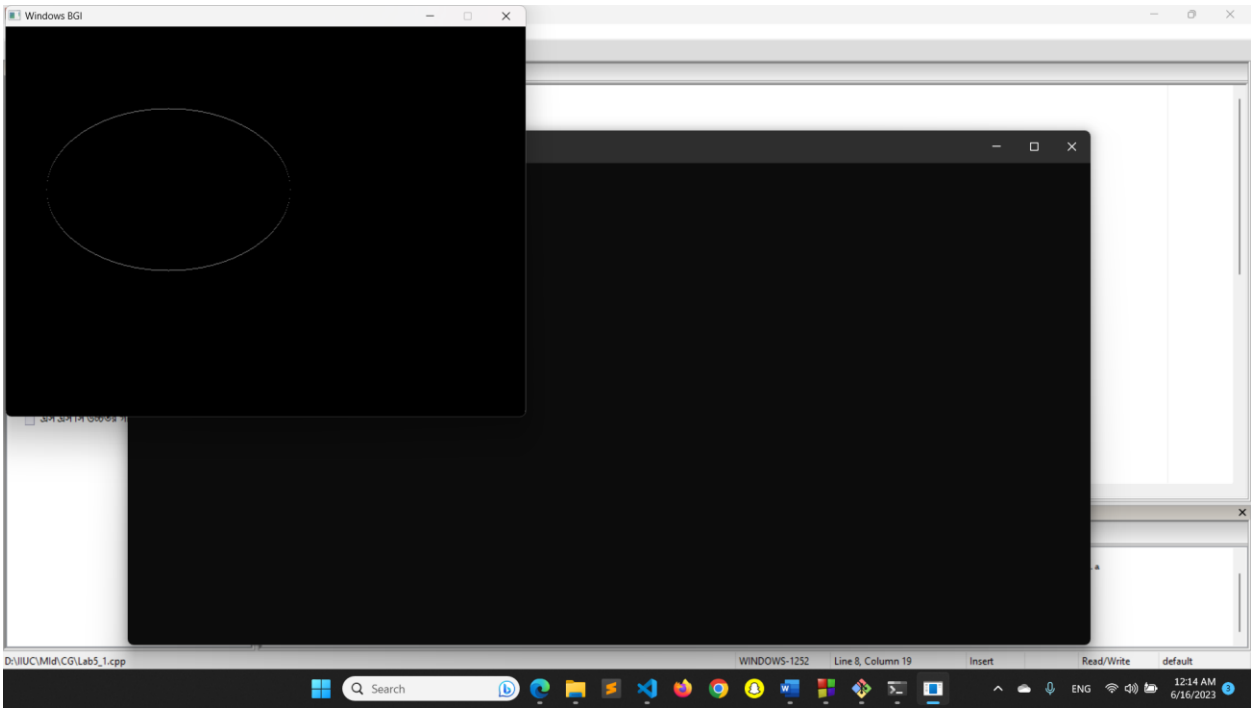
1. Ellipse using polynomial method

```
#include<bits/stdc++.h>
#include<graphics.h>
#include<conio.h>
#include<math.h>
using namespace std;
void plot4pixels(int x,int y,int h,int k)
{
   putpixel(x+h,y+k,8);
   putpixel(x+h,-y+k,8);
   putpixel(-x+h,y+k,8);
   putpixel(-x+h,-y+k,8);
}
int main()
{
   int x,y,r,i,h,k,a,b;
   a=50;
   b=30;
   x=0;
   y=30;
   int gd=DETECT,gm;
   initgraph(&gd,&gm,"");
```

```
    setbkcolor(GREEN);
    while(x<a)
    {
        plot4pixels(x,y,200,200);
        x++;
        y=b*sqrt(((a*a)-(x*x*1.0))/(a*a));
    }
     plot4pixels(x,y,200,200);
    setcolor(8);
    getch();
}
```



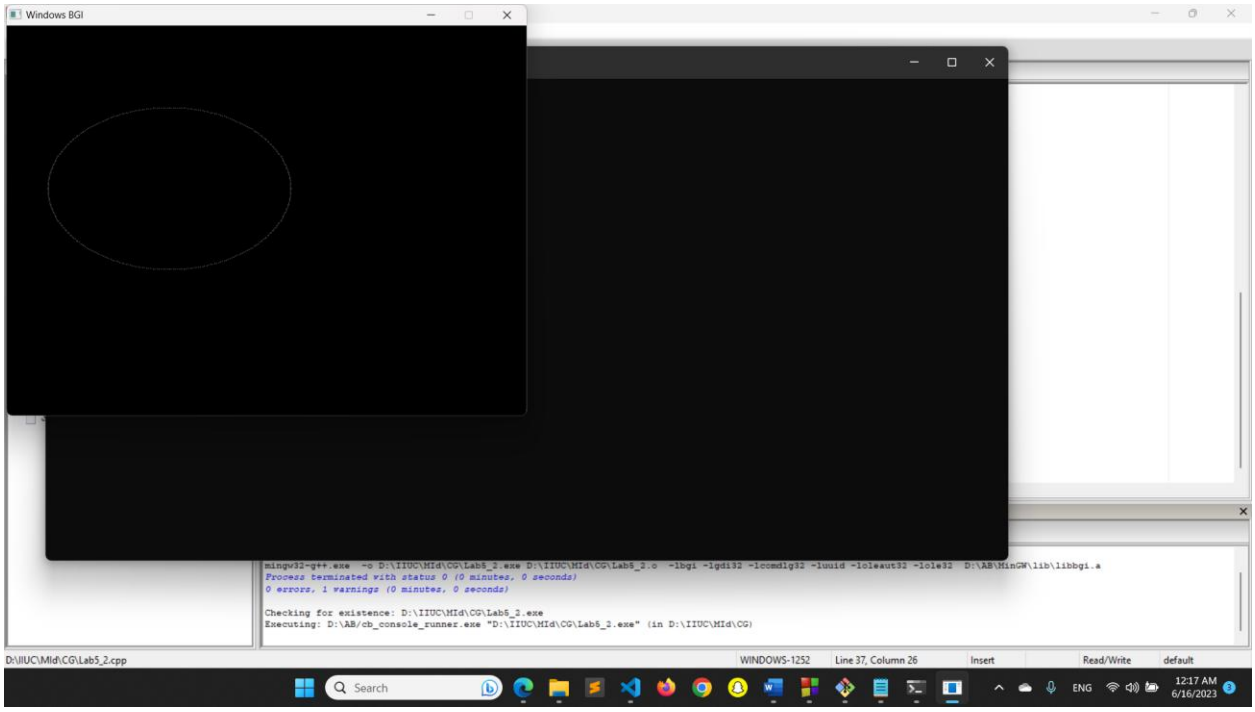
2. Ellipse using Trigonometric method

```
#include<bits/stdc++.h>
```

```
#include<graphics.h>
#include<conio.h>
#include<math.h>
using namespace std;
void plot4pixels(int,int,int,int);
int main()
{
   int x,y,x1,y1,a,b,h,k,theta;
   float p=3.14159/180;

   int gd=DETECT,gm;
   initgraph(&gd,&gm,"");
   setbkcolor(WHITE);
   for(theta=0; theta<=90; theta++)
   {
      x1=50*cos(theta*p);
      y1=30*sin(theta*p);
      x=int(x1+0.5);
      y=int(y1+0.5);
      plot4pixels(x,y,200,200);
   }
   setcolor(8);
```

```
    getch();
    closegraph();
}
void plot4pixels(int x,int y,int h,int k)
{
    putpixel(x+h,y+k,8);
    putpixel(x+h,-y+k,8);
    putpixel(-x+h,y+k,8);
    putpixel(-x+h,-y+k,8);
}
```



3. Arcs

```
#include<bits/stdc++.h>
#include<graphics.h>
```

```
#include<conio.h>
using namespace std;
int main()
{

   int gd = DETECT, gm;
   int x = 250;
   int y = 250;

   int start_angle = 155;
   int end_angle = 300;

   int radius = 100;

   initgraph(&gd, &gm, "");

   arc(x, y, start_angle, end_angle, radius);

   getch();

   closegraph();
```

```
    return 0;
}
```

4. Sectors

```
#include<bits/stdc++.h>
#include<graphics.h>
#include<conio.h>
using namespace std;
int main()
{

    int gd = DETECT, gm;

    initgraph(&gd, &gm, "");

    sector(200, 200, 0, 150, 50, 65);

    getch();

    closegraph();

    return 0;
```

```
}
```