**Lab Report. 02**

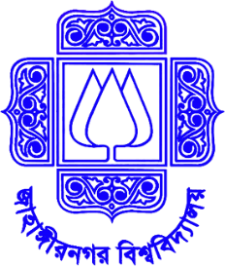
**Title: Lab Report**

*Course title: Computer Graphics Lab*

*Course code: CSE-304*

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###### **Submitted to-**

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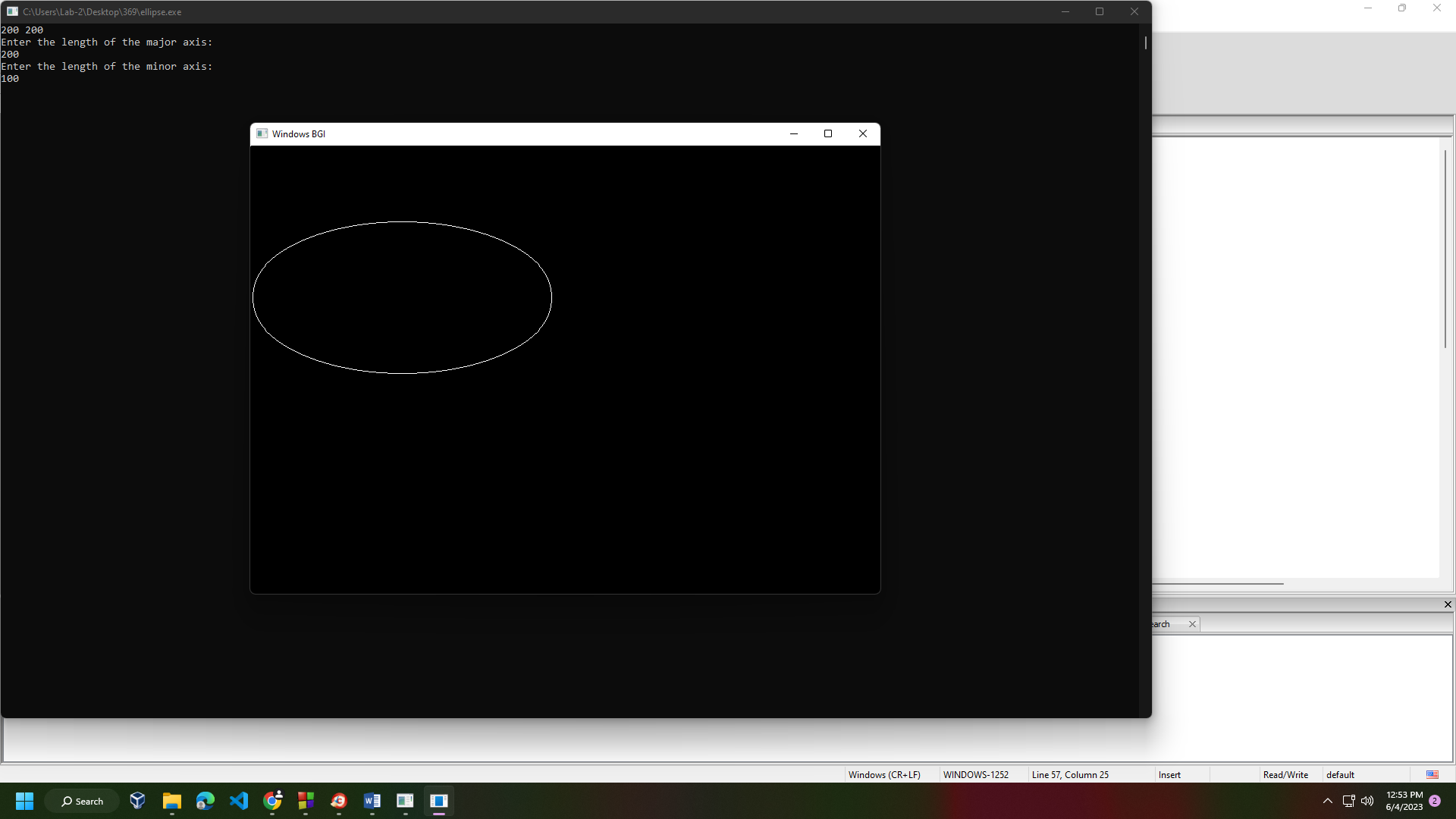
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| **Sl** | Class Roll | Exam Roll | Name |
| 01 | 369 |  | Yumna Tasneem |

Scan conversion of ellipse:

Source code:

|  |  |
| --- | --- |
| #include<iostream>  #include<graphics.h>  using namespace std;  void drawellipse(int xc, int yc, int a, int b)  {  int x=0;  int y=b;  int a\_sqr = a\*a;  int b\_sqr = b\*b;  int two\_a\_sqr = 2\*a\_sqr;  int two\_b\_sqr = 2\*b\_sqr;  int p;  int px = 0;  int py = two\_a\_sqr\*y;  p = b\_sqr - (a\_sqr\*b)+(0.25\*a\_sqr);  while(px<py)  {  putpixel(xc+x,yc+y, WHITE);  putpixel(xc-x,yc+y, WHITE);  putpixel(xc+x,yc-y, WHITE);  putpixel(xc-x,yc-y, WHITE);  x++;  px += two\_b\_sqr;  if(p<0)  {  p += b\_sqr+px;  }  else{  y--;  py -= two\_a\_sqr;  p += b\_sqr + px-py;  }  } | while(y>=0)  {  putpixel(xc+x,yc+y, WHITE);  putpixel(xc-x,yc+y, WHITE);  putpixel(xc+x,yc-y, WHITE);  putpixel(xc-x,yc-y, WHITE);  y--;  py -= two\_a\_sqr;  if(p>0)  {  p += a\_sqr - py;  }  else  {  x++;  px += two\_a\_sqr;  p += a\_sqr - py+px;  }  }  }  int main()  {  int gd = DETECT, gm;  initgraph(&gd, &gm, "");  int xc,yc,a,b;  cout << "Enter the center coordinate of the ellipse: " << endl;  cin >> xc >> yc;  cout << "Enter the length of the major axis: " << endl;  cin >> a;  cout <<"Enter the length of the minor axis: "<< endl;  cin >> b;  drawellipse(xc,yc,a,b);  delay(500000);  closegraph();  return 0;  } |

Output:



Scan conversion of midpoint of a circle:

Source code:

|  |  |
| --- | --- |
| #include <iostream>  #include <graphics.h>  void drawCircle(int xc, int yc, int radius)  {  int x = 0;  int y = radius;  int d = 1 - radius;  int deltaE = 3;  int deltaSE = -2 \* radius + 5;  while (y > x)  {  putpixel(xc + x, yc + y, WHITE);  putpixel(xc + x, yc - y, WHITE);  putpixel(xc - x, yc + y, WHITE);  putpixel(xc - x, yc - y, WHITE);  putpixel(xc + y, yc + x, WHITE);  putpixel(xc + y, yc - x, WHITE);  putpixel(xc - y, yc + x, WHITE);  putpixel(xc - y, yc - x, WHITE); | if (d < 0)  {  d += deltaE;  deltaE += 2;  deltaSE += 2;  }  else  {  d += deltaSE;  deltaE += 2;  deltaSE += 4;  y--;  }  x++;  }  }  int main()  {  int gd = DETECT, gm;  initgraph(&gd, &gm, "");  int xc = 250;  int yc = 250;  int radius = 100;  drawCircle(xc, yc, radius);  delay(5000);  closegraph();  return 0;  } |

Output:

