Kathmandu University

Department of Computer Science and Engineering

Dhulikhel, Kavre



Computer Graphics (COMP 342)

Lab 3 Report

Submitted To:

Mr. Dhiraj Shrestha

Department of Computer Science and Engineering

Submitted By:

Mani Dumaru

Roll no.: 15

CE-2019 3rd year/2nd semester

Submission Date: 24th April, 2023

Write a Program to implement mid- point Circle Drawing Algorithm.

*Algorithm:*

Input: Center and Radius of the circle

Output: A circle with given center and radius

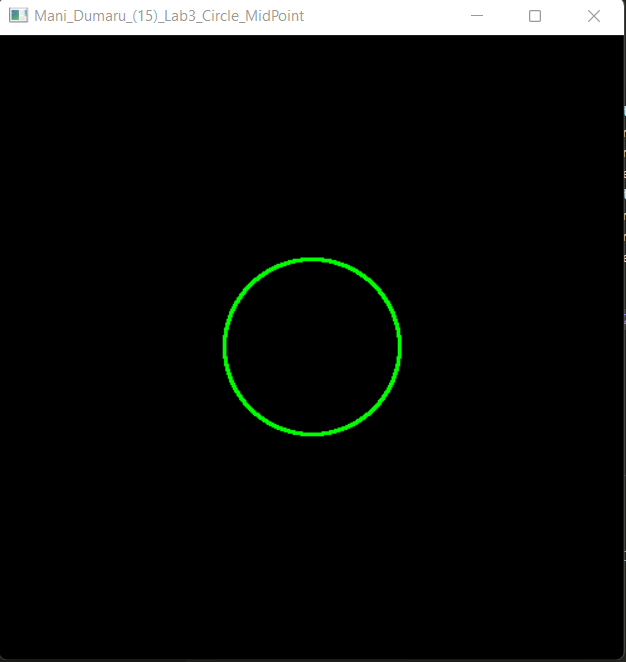
1. X = 0 , Y = radius
2. While X <= Y
   1. PLOT (X + x\_center, Y + y\_center) - use eight-point symmetry
   2. X = X + 1
   3. d\_parameter = x2 + (y-(1/2))2 – radius2
   4. if (d\_parameter > 0)
      1. y = y – 1

END IF

END WHILE

*Source Code:* [circle.py](https://raw.githubusercontent.com/manidumaru/LabWorksSem6/master/Graphics/Lab3/circle.py)

*Output:*



Write a Program to implement mid- point Ellipse Drawing Algorithm.

*Algorithm:*

Input: radius x, radius y, center

Output: Ellipse with given data

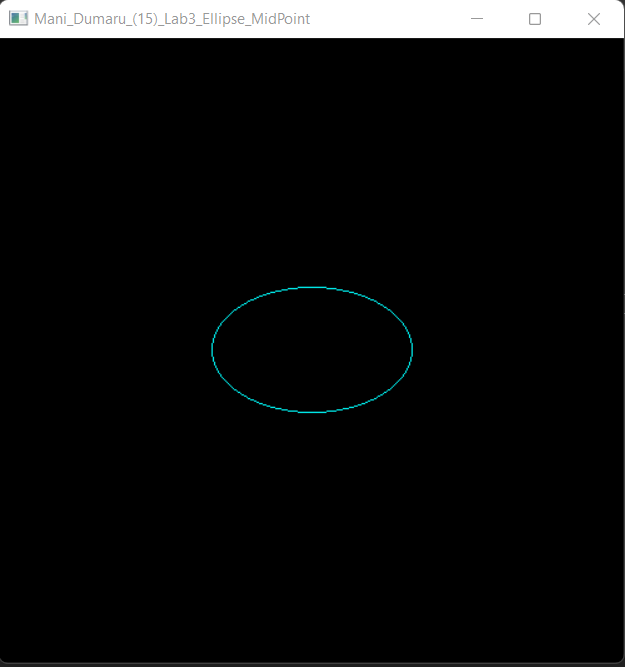
1. X = 0, Y = r\_y
2. While(x <= r\_x and y >= 0)
   1. Plot (X + x\_center, Y + y\_center) Use four-point symmetry
   2. If (2 \* r\_y2 \* x < 2 \* r\_x2 \* y)
      1. X = X + 1
      2. d\_parameter = r\_x2 \* (y-(1/2))2 + r\_y2 \* x2 – r\_x2r\_y2
      3. if d\_parameter > 0
         1. y = y – 1
   3. Else
      1. Y = Y – 1
      2. d\_parameter = r\_x2 \* y2 + r\_y2 \* (x+(1/2))2 – r\_x2r\_y2
      3. if d\_parameter < 0
         1. x = x + 1

END IF

END WHILE

*Source Code:* [Ellipse.py](https://raw.githubusercontent.com/manidumaru/LabWorksSem6/master/Graphics/Lab3/ellipse.py)

*Output:*

**

Conclusion:

Hence, Circle and Ellipse drawing was implemented using the mid-point algorithm.