

ICS2311 – Computer Graphics

CAT on Transformations and Shapes

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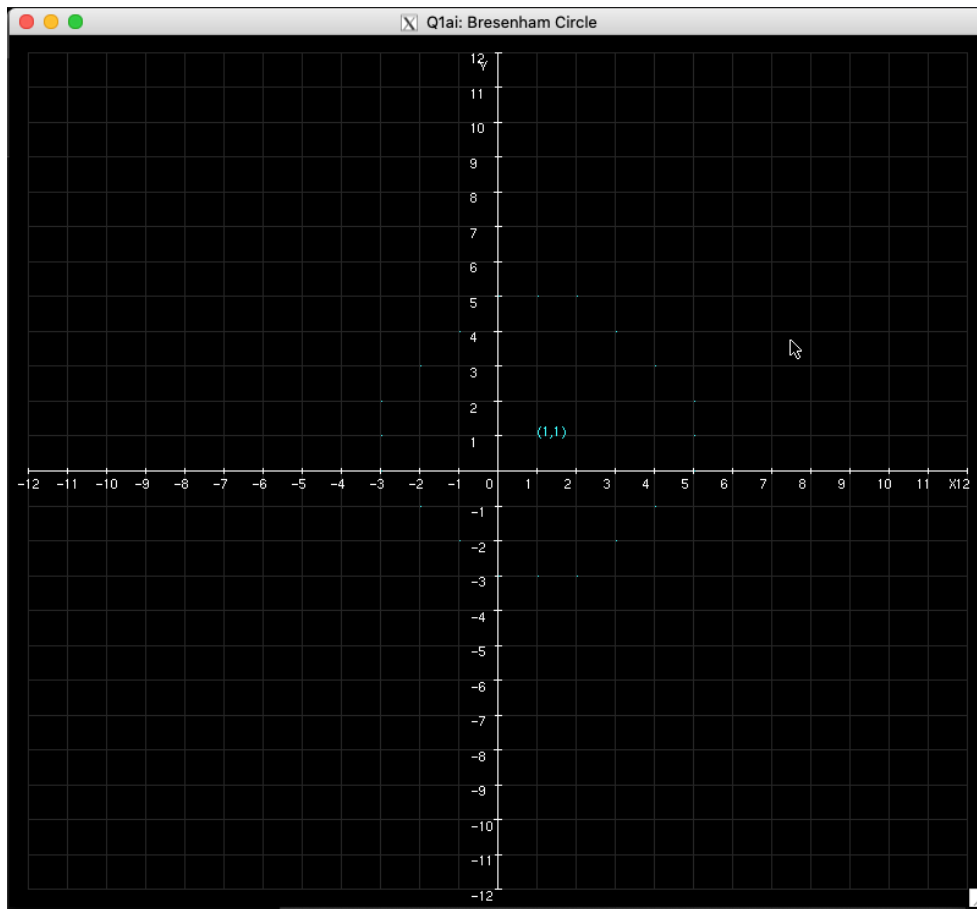
Submission Date: 13/03/2025

1(a): Bresenham Circle

Approach & Implementation

- Implemented **Bresenham's Circle Drawing Algorithm** to draw a **circle with radius 4 cm** and **center at (1,1)**.
- Used OpenGL's **GL_POINTS** to plot the circle within a **Cartesian plane**.
- **Scaling** where **1 cm = 1 OpenGL unit**.

Output & Screenshots

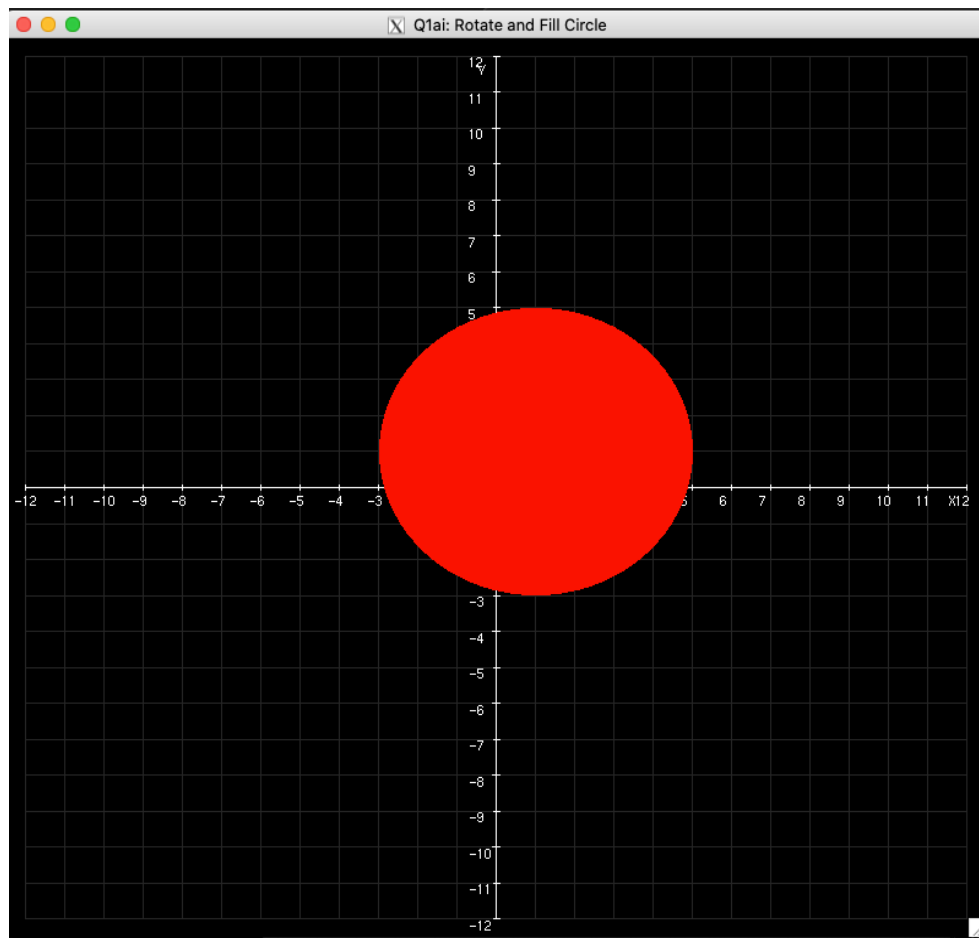


1(a)(i): Rotate and Fill the Circle

Approach & Implementation

- Rotated the **circle 60° clockwise** using OpenGL's `glRotatef` function.
- Filled the circle with **red color (#FF0000)** using `GL_TRIANGLE_FAN`.
- **Rotation is centered at (1,1)** for accuracy

Output & Screenshots



1(b): Triangle with Circumscribed Circle

Approach & Implementation

Output & Screenshots

Question 2: Ellipse Drawing

Approach & Implementation

Output & Screenshots

Question 3: Square Transformations

Approach & Implementation

Output & Screenshots

Question 4: Polygon Drawing and Scaling

Approach & Implementation

Output & Screenshots

Question 5: Parabola Drawing