Interactive Computer Graphics

Lab 7 (14/09/2021)

Using OpenGL, draw the following figures. The dimensions of the various components in the figures can be considered as you wish, but the overall shape should be the same as the figures given in the question.

1. Use the following methods to draw an Ellipse. The center, color, major and minor axes lengths should be taken as random input (Everytime you run the algorithm, a new ellipse will be generated).
    a. General Ellipse drawing Algorithm
    b. Parametric form
    c. Mid-point Ellipse drawing (MED) algorithm
2. Use Mid-point Ellipse Drawing (MED) algorithm to draw the an elliptical arc (as show in the figure) with major axis length $2r_x$ and minor axis length $2r_y$, starting angle α, sweeping angle β. Angles are taken in anti-clockwise direction. ($-2\pi<=\alpha<=2\pi$ and $-2\pi<=\beta<=2\pi$). Input to the algorithm are major, minor axis lengths, center of the arc, α and β in degrees. All the inputs should be random (Everytime you run the algorithm, a new elliptical arc will be generated).