



CS221: Programming II

Assignment 2:

Vector Drawing Report

Names:

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Introduction:

This report discusses the implementation of the vector drawing application. The application supports the drawing of simple geometric shapes such as lines, rectangles, ellipses, circles, etc.

The application was developed by Java programming language. Simple concepts of Object Oriented Programming were used in implementing this app.

Main Features:

- 1 - Free sketching.
- 2 - Drawing simple geometric shapes.
- 3 - Deletion, resizing, movement of the geometric shapes.
- 4 - Saving drawings as XML and JSON files.
- 5 - Loading previously saved drawings.
- 6 – Coloring the shapes and free sketching with different colors.



Design Overview:

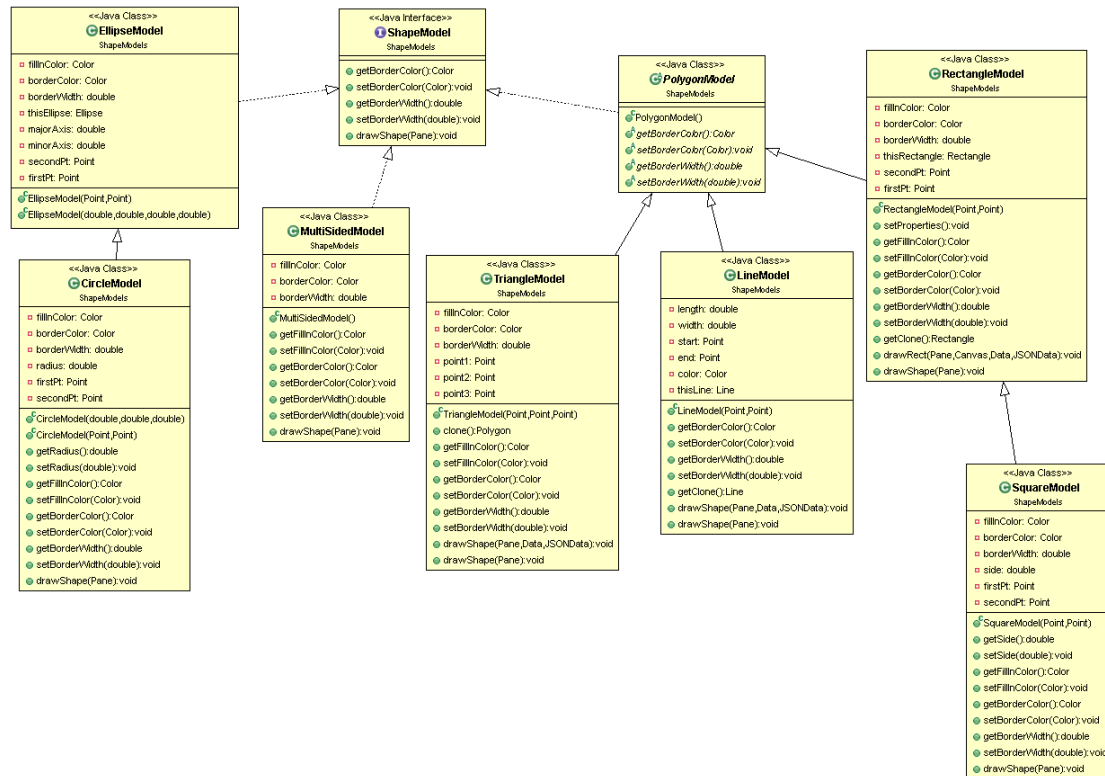
Note: The MVC design pattern was used in this project.

The design was divided into several packages:

- ShapesModels: This package contains the geometrical shapes models as Classes and Interfaces. It also contains the MouseGesture Class that adds the motion effects to the shapes.
- View: This package contains the GUI class that controls the flow of the application.
- ShapesControllers: This package contains the geometrical shapes controllers that orders ShapesModels to perform creation and editing tasks.

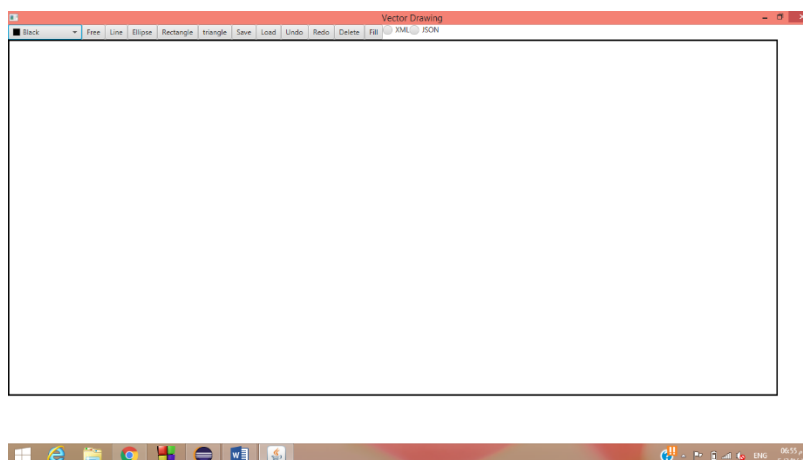


UML Diagram:



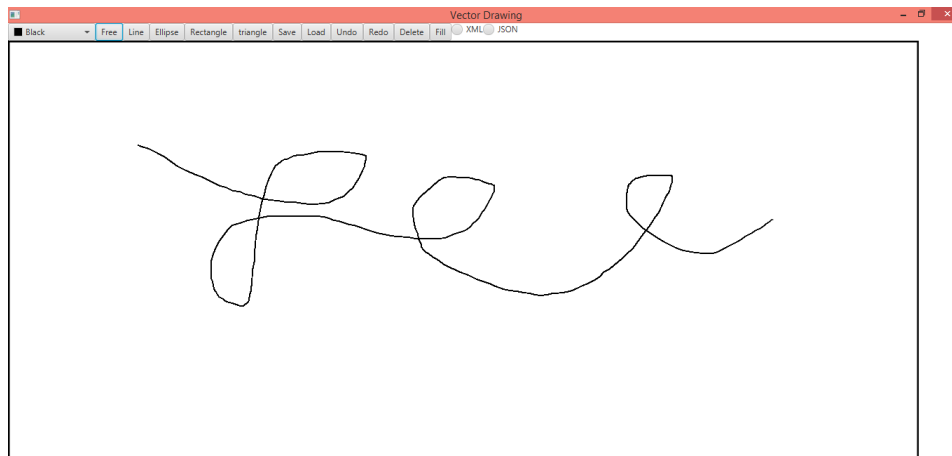
User Guide:

Upon opening the canvas should appear as follows:

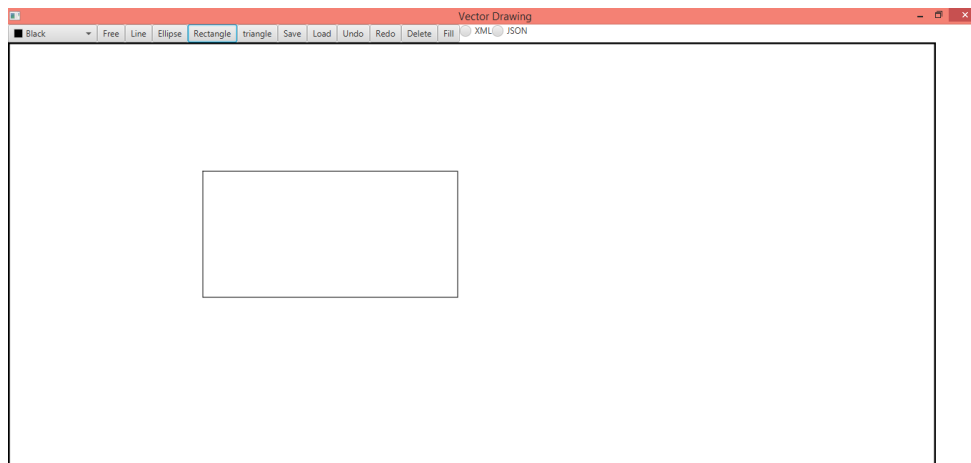




For free sketching press the "Free" Button and roam in the canvas to obtain a similar view of the canvas:

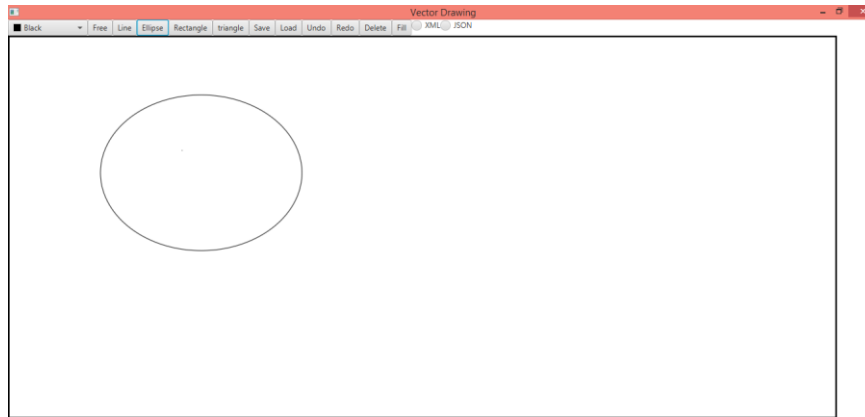


For Rectangle insertion, press the "Rectangle" Button, click anywhere in the screen, drag and release to draw a new rectangle:

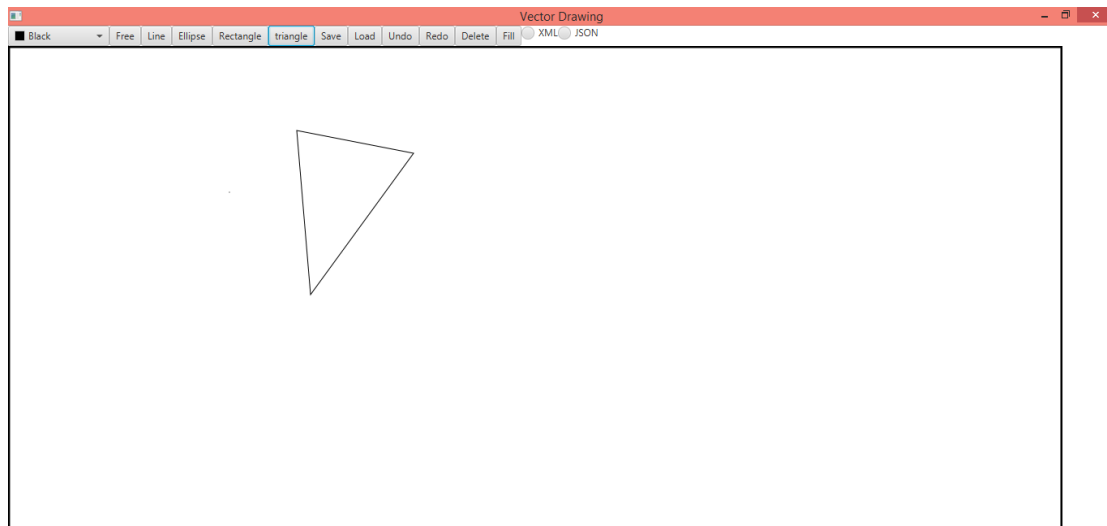




For Ellipse insertion, press the "Ellipse" Button, click anywhere, drag, and release to draw:



For Triangle Insertion click on any three points in the canvas to draw a triangle with the previously indicated vertices:





Save:

For saving, choose any of the two radio buttons to indicate whether to save as a XML or as a JSON file. Then, traverse using browsing windows the saved file destination.

Load:

For loading, traverse to an existing drawing and choose it to load it back on screen.

Undo/Redo:

For undoing and redoing, press the undo/redo buttons. An error message will be displayed if no available actions would be undone/redone.

Deletion:

For shapes deletion, click the "Delete" button and click on the shapes to delete them.

Color Filling:

For color filling, choose the preferred color using the color picker, click the "Fill" button, and choose the shape you want to color.



Resizing:

For rectangle resizing, resize by dragging any corner of the rectangle.

For ellipse resizing, resize by dragging any of the endpoints of the major and minor axes.

For triangle resizing, drag any triangle vertex and resize.

For line resizing, drag any of the two endpoints.

Dynamic Class Loading:

To load a class, press "Choose Class" and traverse to the .class path and choose it. Appropriate buttons should be added to the toolbox.