

CSC309H1F Assignment 1:

A Canvas Draw Web Application using HTML5, CSS3, and JavaScript

By Shaun Kho and Milind Shah

#998344796

#998907982

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Documentation

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Contents:

1. Features
2. Functionality
3. Implementation

Features:

This web application enables users to:

1. Draw the following shapes:
 - a. Straight lines
 - b. Triangles
 - c. Rectangles
2. Set the following graphics properties for each shape:
 - a. Outline color
 - b. Fill color
 - c. Outline width
3. Perform the following operations on each shape:
 - a. Erase
 - b. Move
 - c. Resize
 - d. Change its outline color, fill color, and outline width
 - e. Copy and paste
4. Clear all shapes on the canvas

Functionality:

Lines	Lines are drawn using a simple drag and drop interface with the initial point defined by the coordinate at which the left mouse button was pressed and the final point defined by the coordinate at which the left mouse button was released.
Triangles	In order to draw a triangle in the canvas. The user have to press the triangle button and it can be drawn by using a simple drag and drop interface. The triangle is resizable meaning that it can select one of the corners to resize the steps. It can also be selectable to move the position of the triangle.
Rectangles	In order to draw a rectangle in the canvas. The user to press the button that says “rectangle” and it can be drawn by using a simple drag and drop interface. The rectangle is resizable meaning that it can select on of the corners to resize its shape. It can also be selectable to move the position of its shape.
Outline/Fill color	The user has to select the shape and then it can change its outline/fill color by selecting the drop down menu and the user have the ability to choose the color they want. And then select fill color/outline color.
Outline Width	The user is able to select a shape and it can change its outline width by simply selecting the drop down menu and confirming it by simply clicking on the outline width.
Erase	In order to erase a shape, the user have to select by clicking a selecting button and then click on the shape and then click on the erase button to completely erase the subject.
Copy/Paste	The user can select a shape and then the user can copy its shape and paste it right in the canvas and the user has the ability to move the both of the shapes as well as the new copied shape have access to all the features of this canvas.

Clear	The user can delete all the shapes by simply clicking on the “clear the canvas” button.
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Implementation:

- Shapes and their resize points were grouped together.
- An array was used to store the shapes grouped with their resize points
- The KineticJS library was used to create lines, rectangles, and triangles from predefined shape classes. Lines and rectangles had existing implementations, whereas our triangle implementation extended the existing Polygon class. The shapes were then manipulated using the draggable and listening fields in conjunction with added event listeners that captured various mouse events.