

# Web Based Drawing Program

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CSE223: Programming - 2

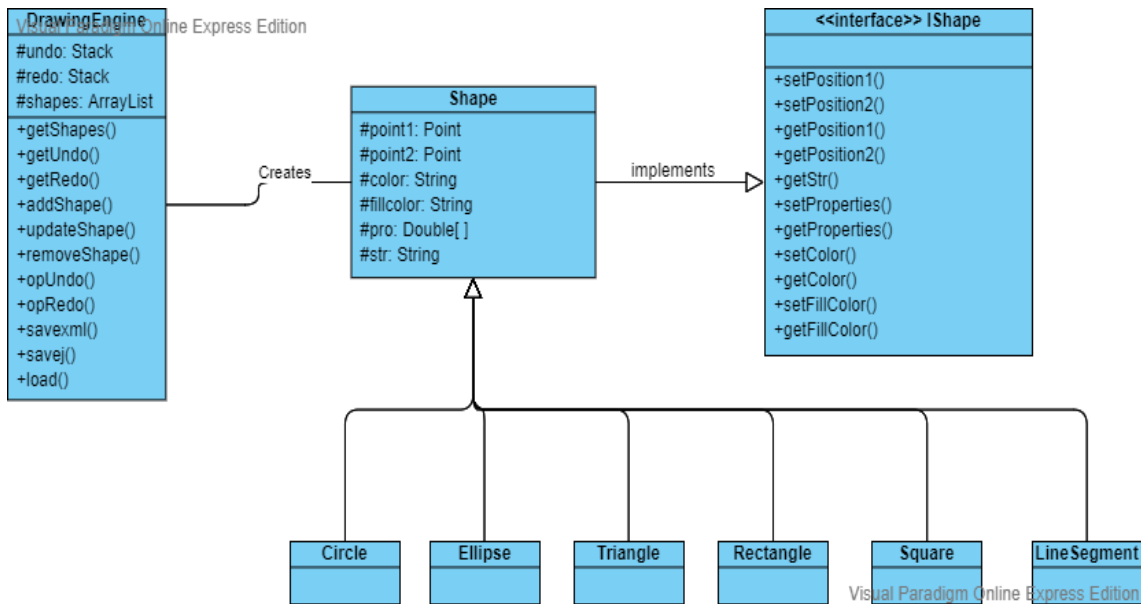
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## How-To-Run

- 1- Open Painter folder by IDEA.
- 2- Run  
src\main\java\eg.edu.alexu.csd.oo  
p.draw.cs\CsApplication ( Port:8090 ).
- 3- Open Paint folder by IDEA.
- 4- Install “axios” ( npm install axios ).
- 5- Run src\components\Paint.vue ( npm run serve ).
- 6- <http://localhost:8080/>



# UML Class Diagram



## Design Pattern

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We used Factory design pattern to generate new shapes depending on the type of the shape.

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## Design Decisions

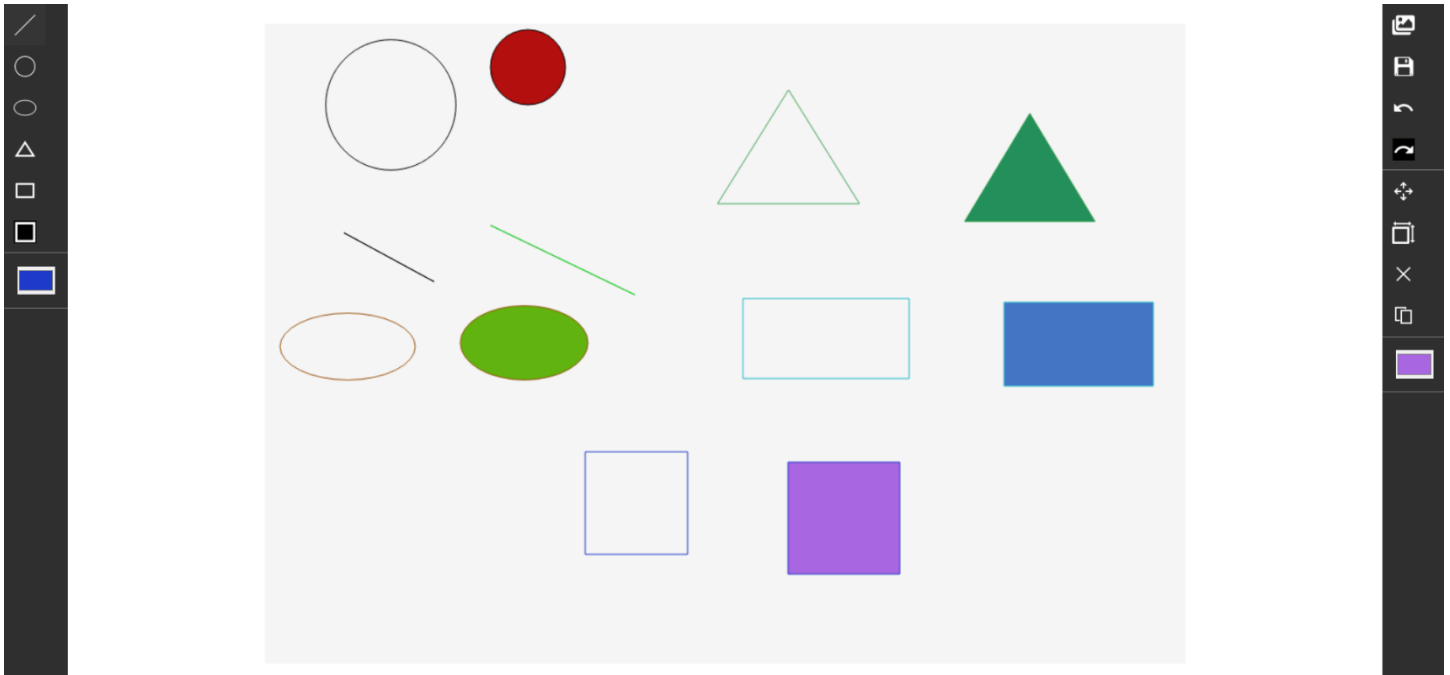
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- We have decided to put two toolboxes one of them at left, the other one at right and between them there is a canvas that we can draw on it.
  - The one that at left includes the group of shapes (Line segment, Circle, Ellipse, Rectangle, Triangle and Square) and the border color picker.
  - The other one at right includes the group of possible operations (Save, Load, Undo and Redo), the group of tools (Move, Resize, Delete and Copy) and the fill color picker.
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## Snapshots of UI & User Guide

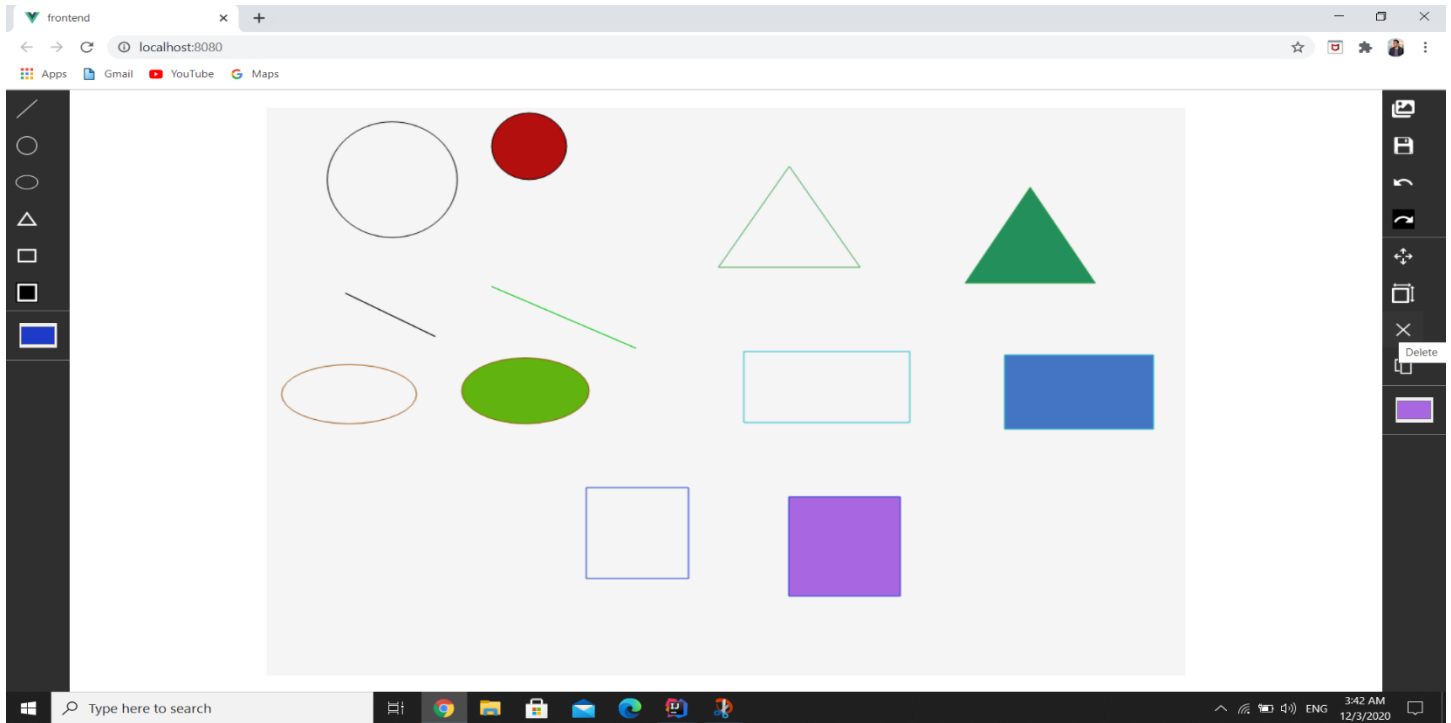
### General (Drawing).

- To draw a shape, press on any icon then go to the canvas and click and drag.
- If user clicks on any shape icon, the shape will stay with him until he clicks on another icon.
- If user want to make a shape that its border has color, he should pick a color from the color picker that lies at left toolbox before he draws the selected shape.
- If user want to make a shape that is filled with any color, he should pick this color from the color picker that lies at right toolbox before he draws the selected shape.
- Every time the user picks a new shape, he must pick a new fill color but the border color stays the same.

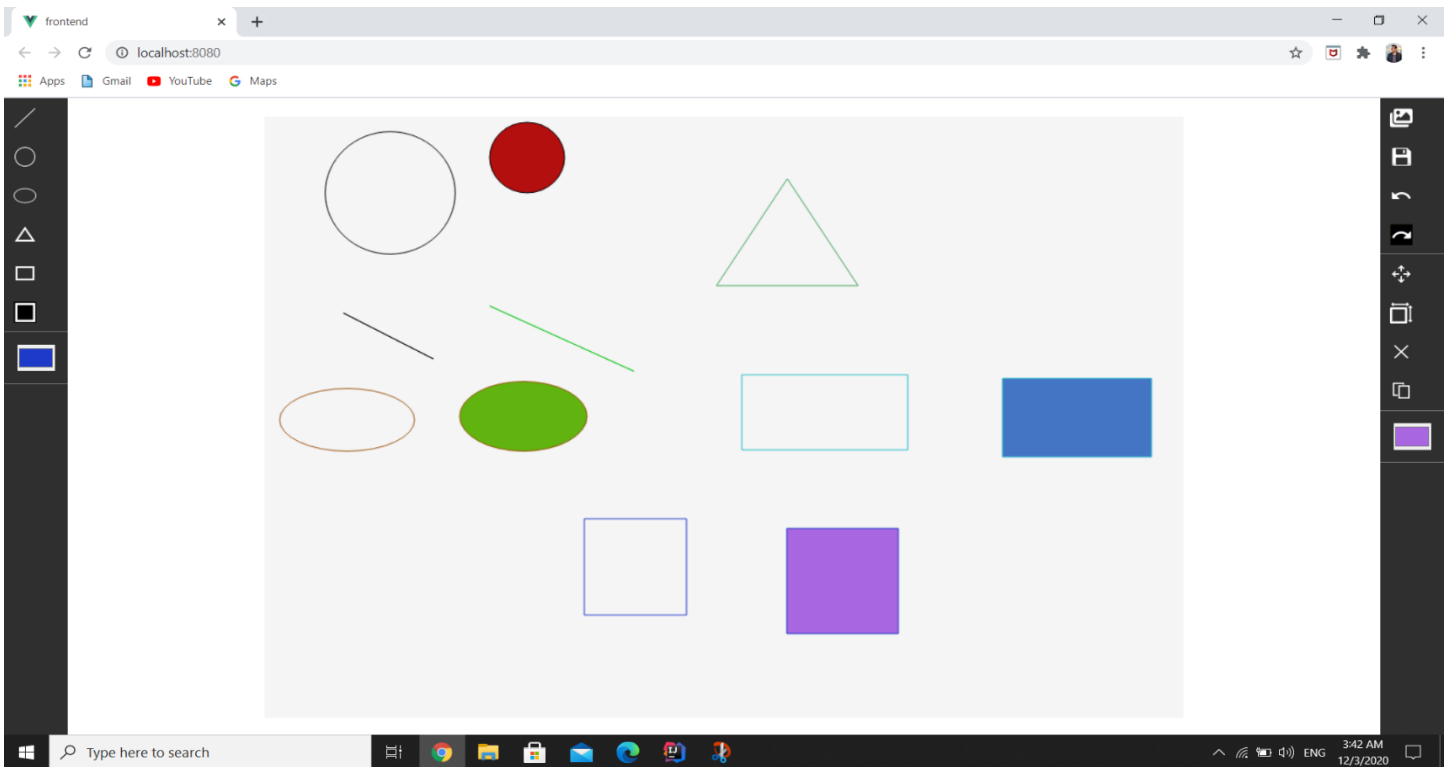


## Delete the filled triangle.

- To delete a shape, the user must click on the delete icon then click on the shape which he wants to delete.
- Delete operation is permanent and the user cannot undo it.
- Every time the user wants to delete a shape, he must go back to delete icon then click on it again (You cannot delete many shapes at the same time).

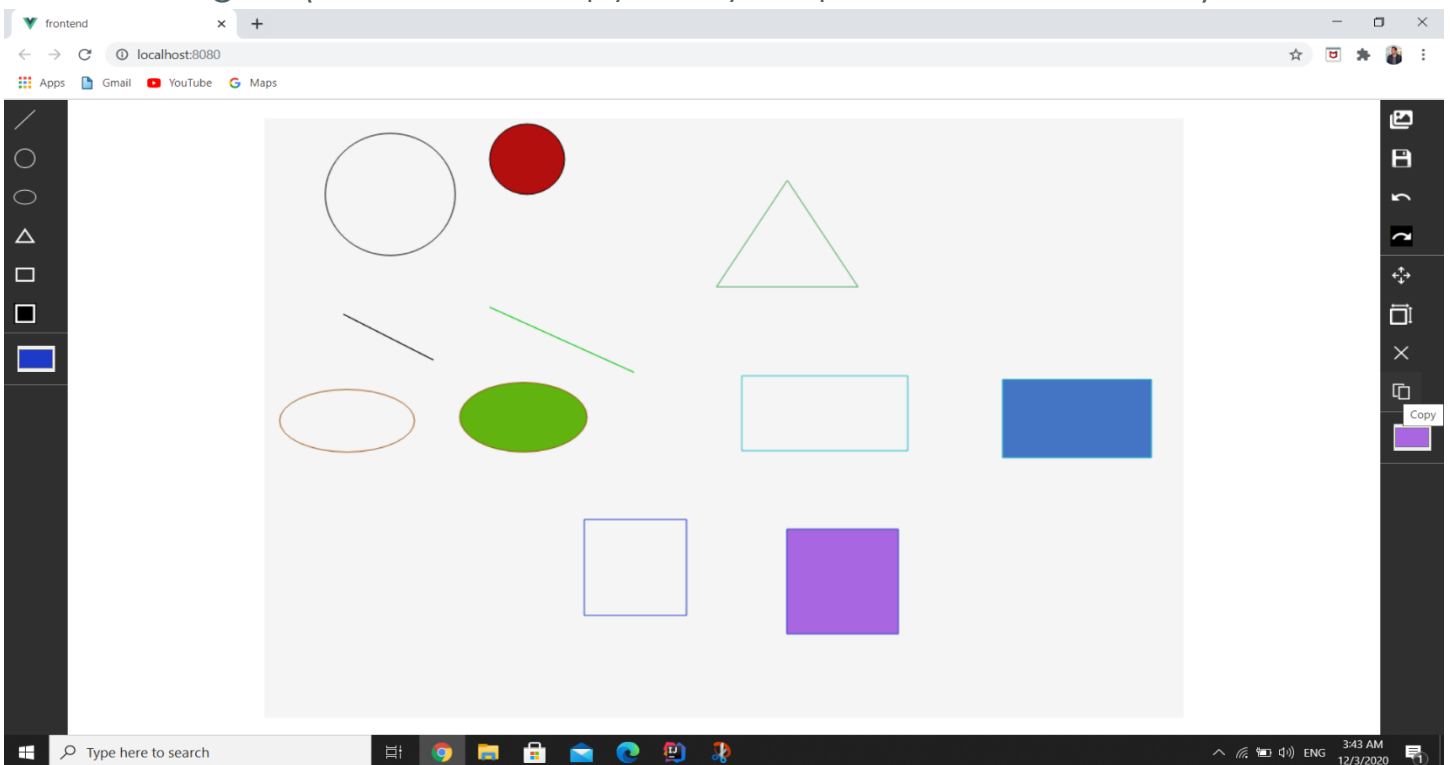


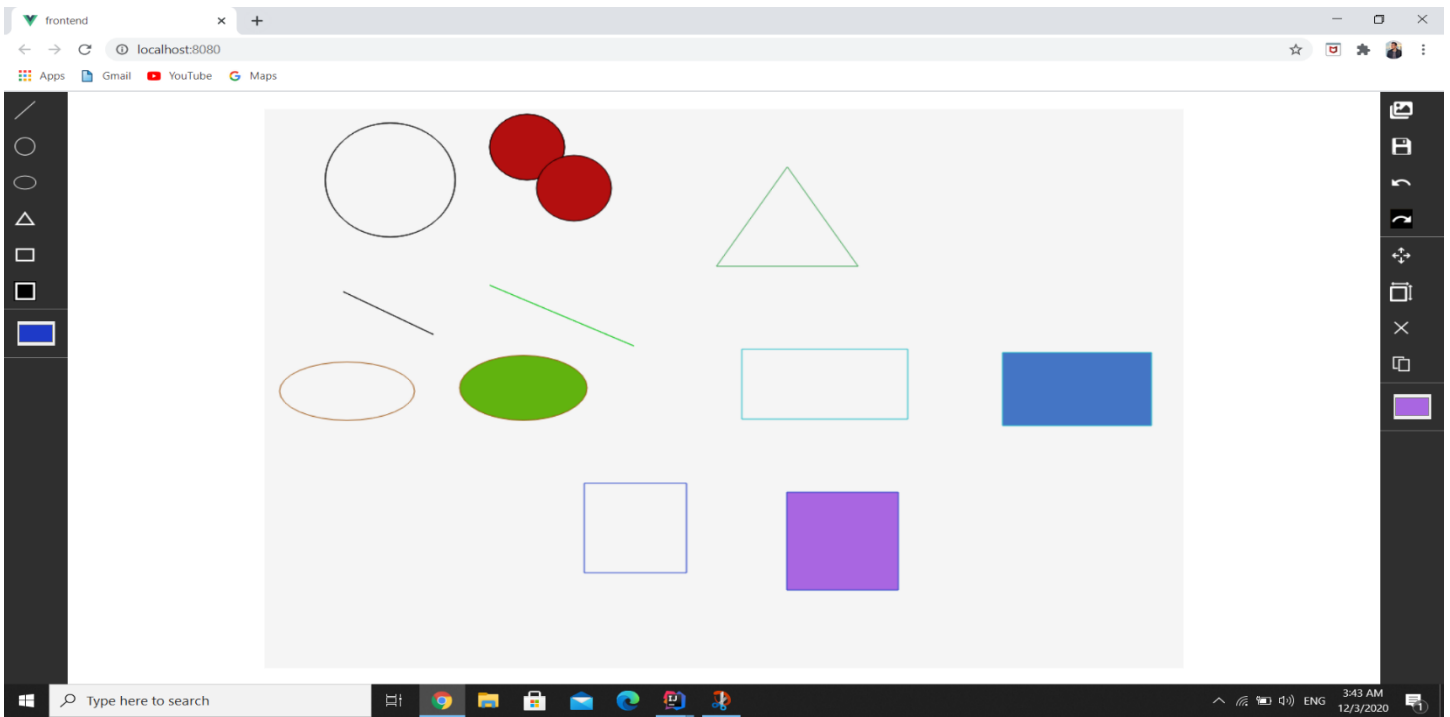




### Copy the filled circle.

- To copy a shape, the user must click on the copy icon then click on the shape which he wants to copy.
- Every time the user wants to copy a shape, he must go back to copy icon then click on it again (You cannot copy many shapes at the same time).

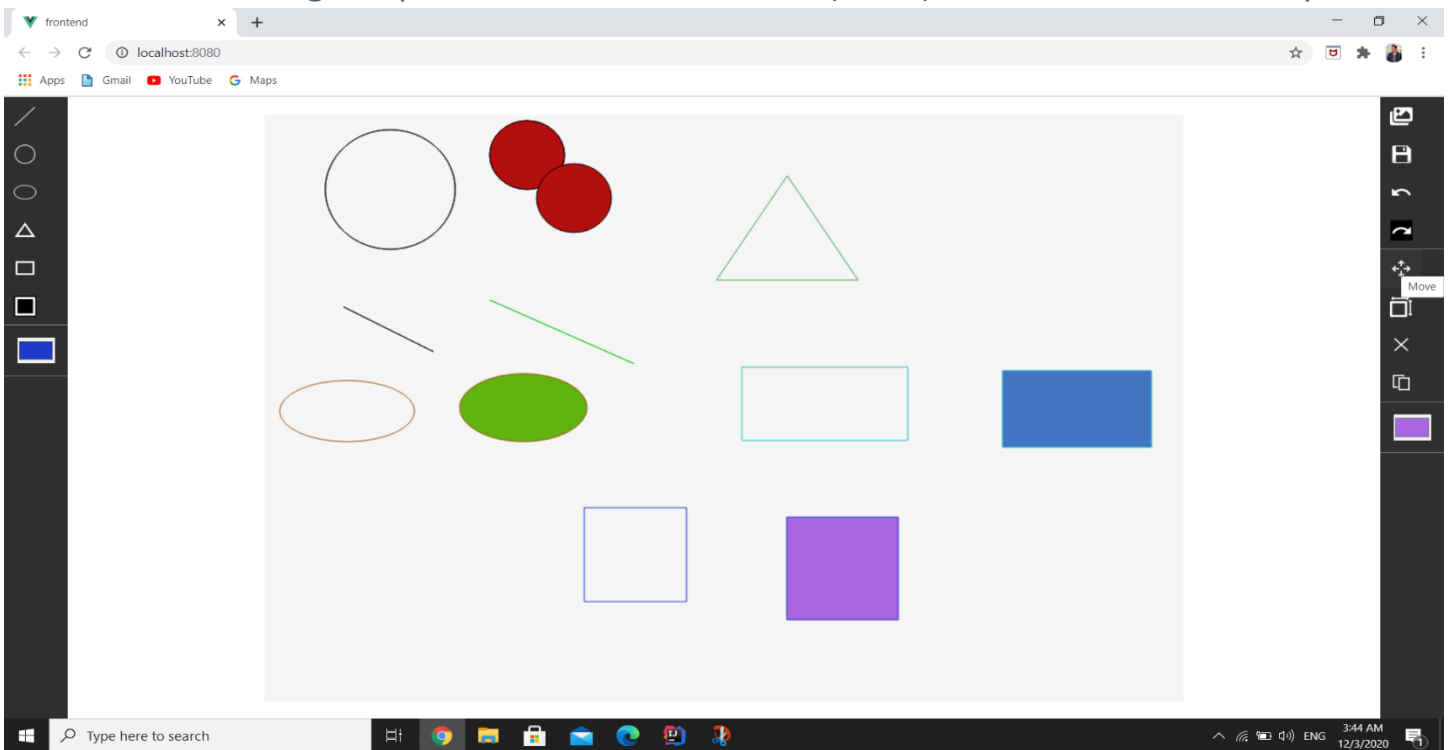




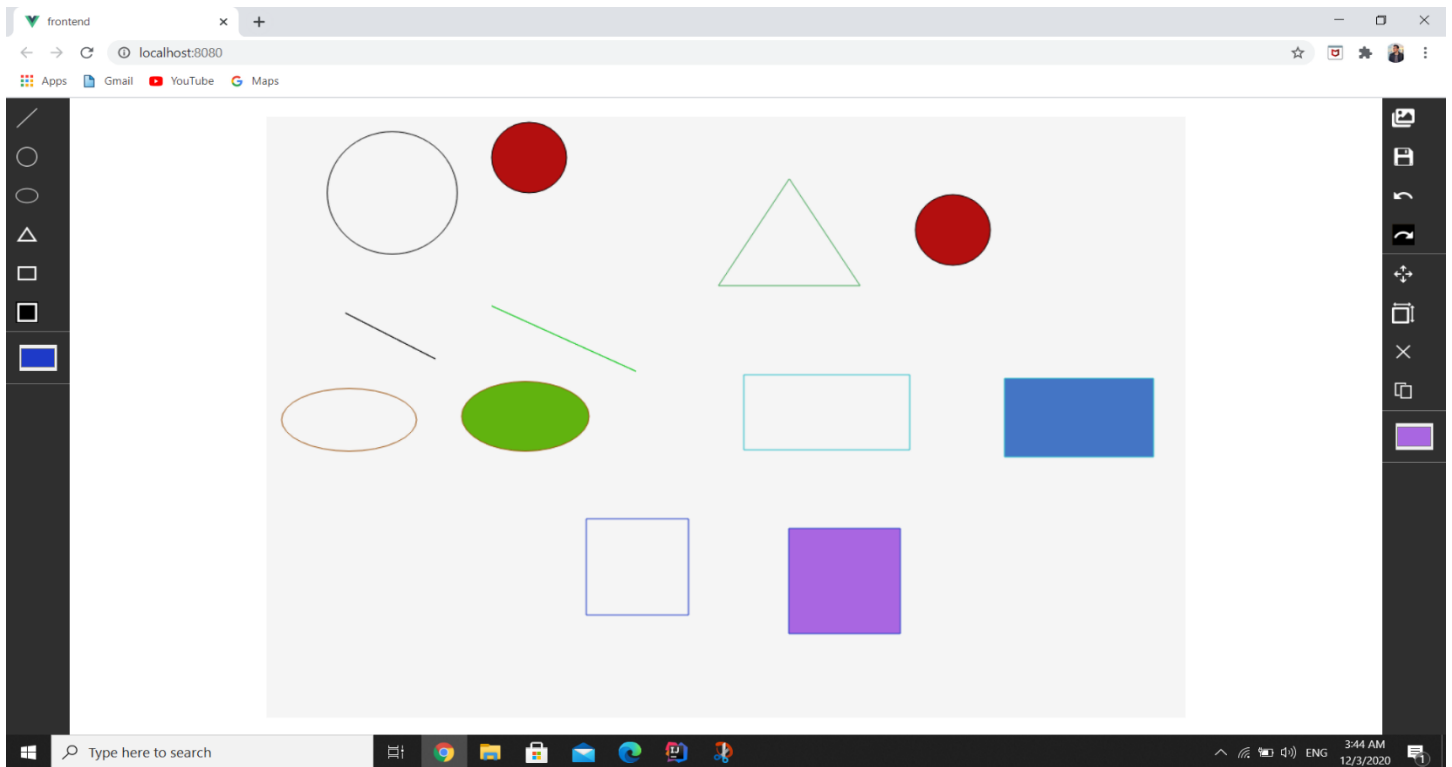
### Move the copied filled circle.

-To move a shape, the user must click on the move icon then click on the shape which he wants to move and drag it.

-Every time the user wants to move a shape, he must go back to move icon then click on it again (You cannot move many shapes at the same time).

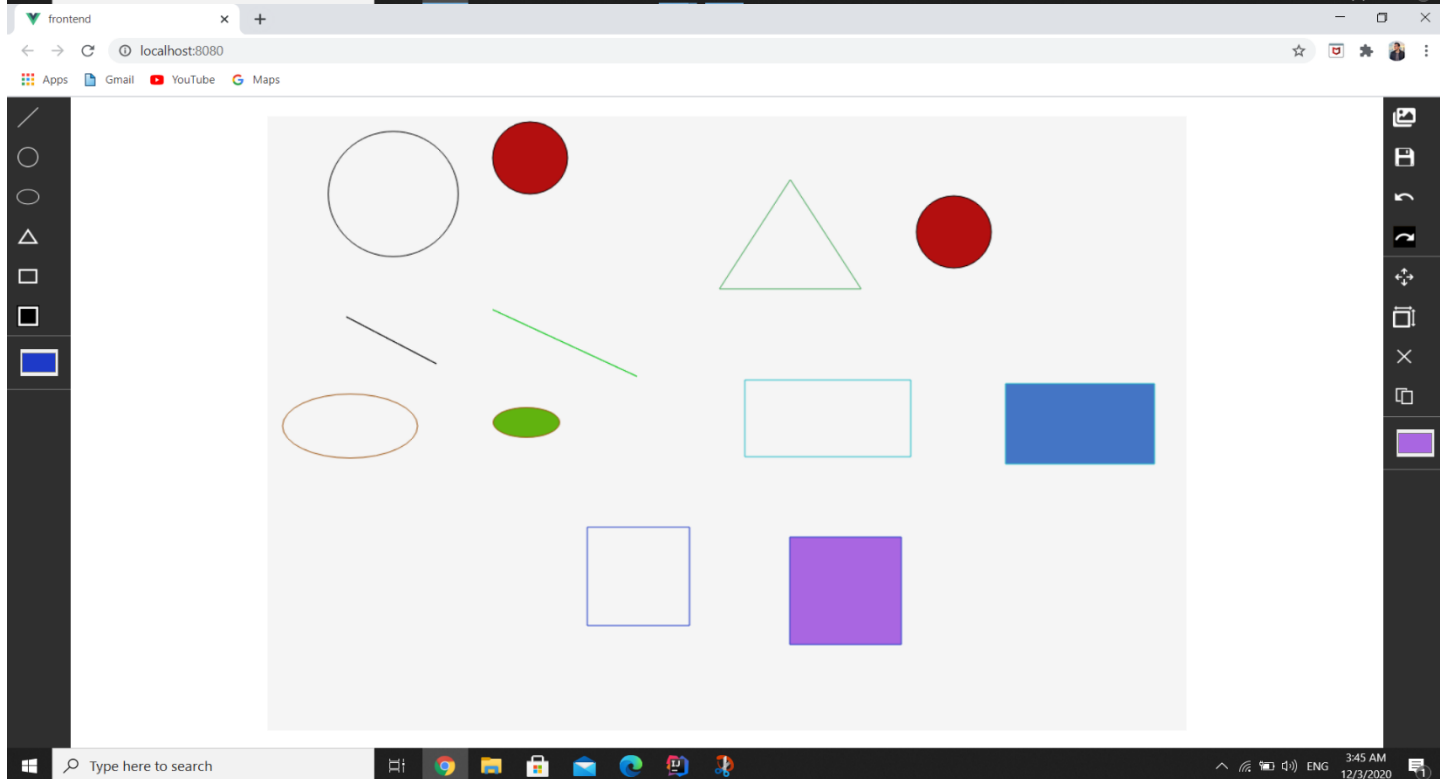
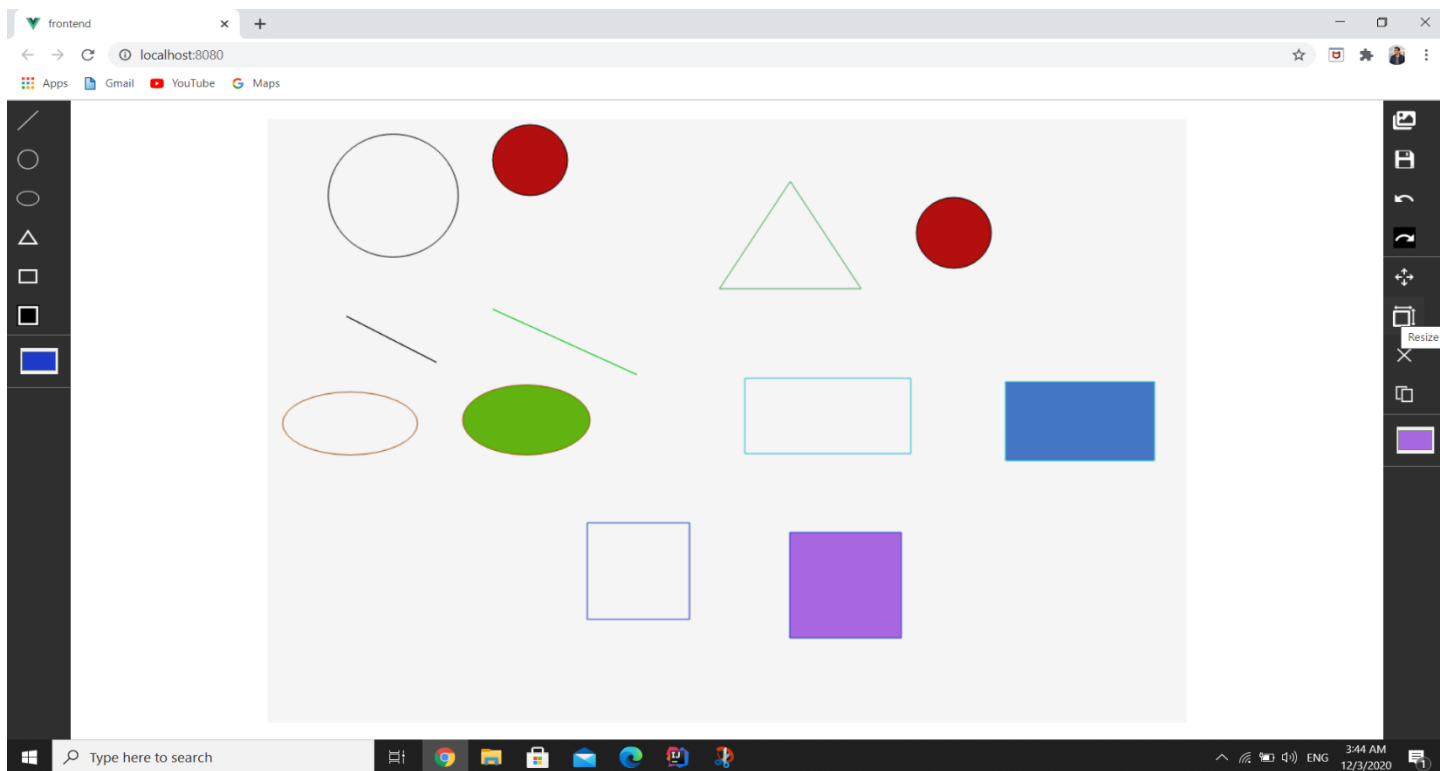


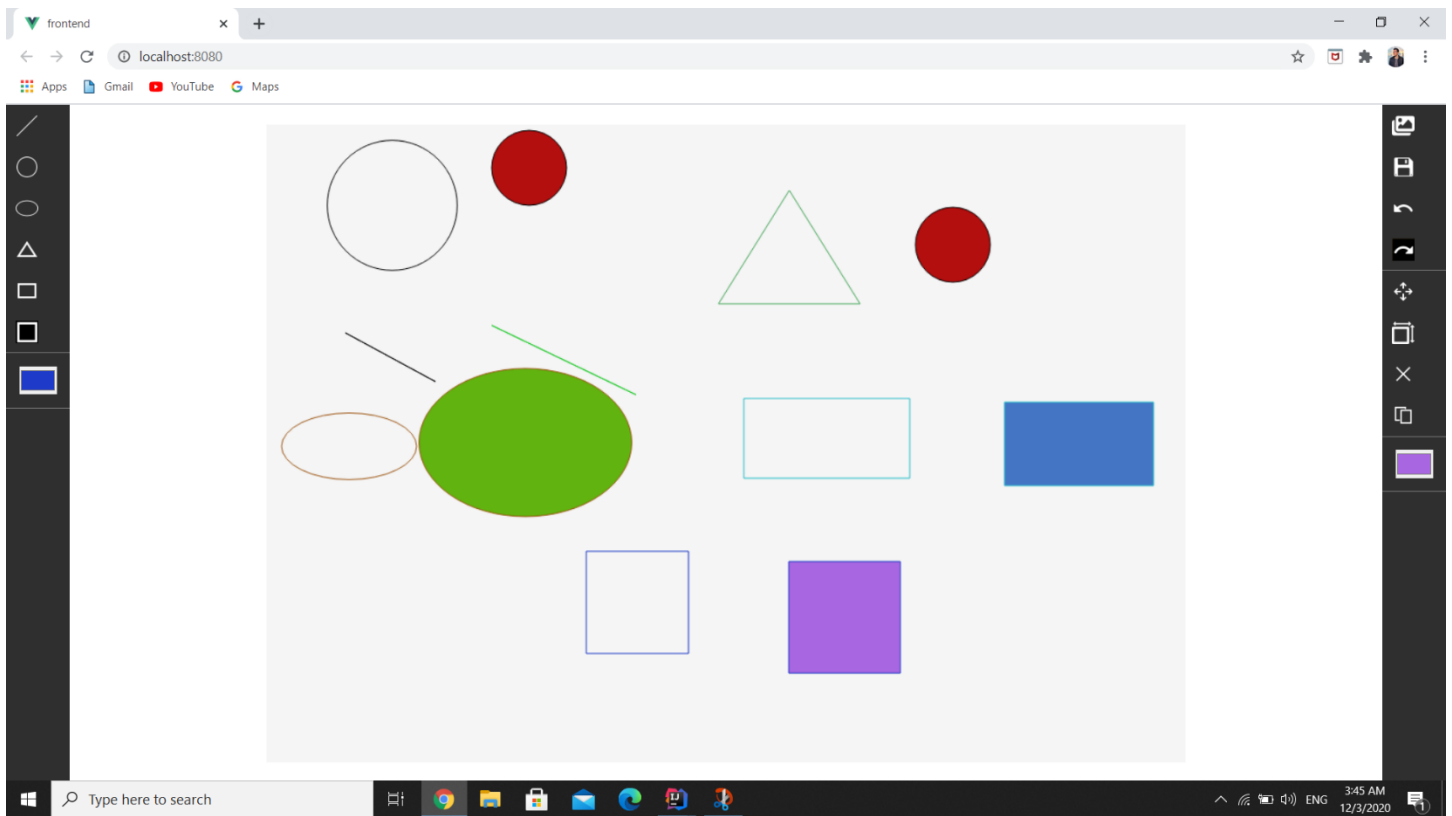




### **Resize the filled ellipse.**

- To resize a shape, the user must click on the resize icon then click on the shape which he wants to resize and drag it.
- Every time the user wants to resize a shape, he must go back to resize icon then click on it again (You cannot resize many shapes at the same time).





## Undo & Redo.

- The user clicks on undo icon to remove the last step he took.
- The user clicks on redo icon to get the last step he undid back.
- Our application supports multiple undo and redo operations.

