

Web based painter

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Logo
Name

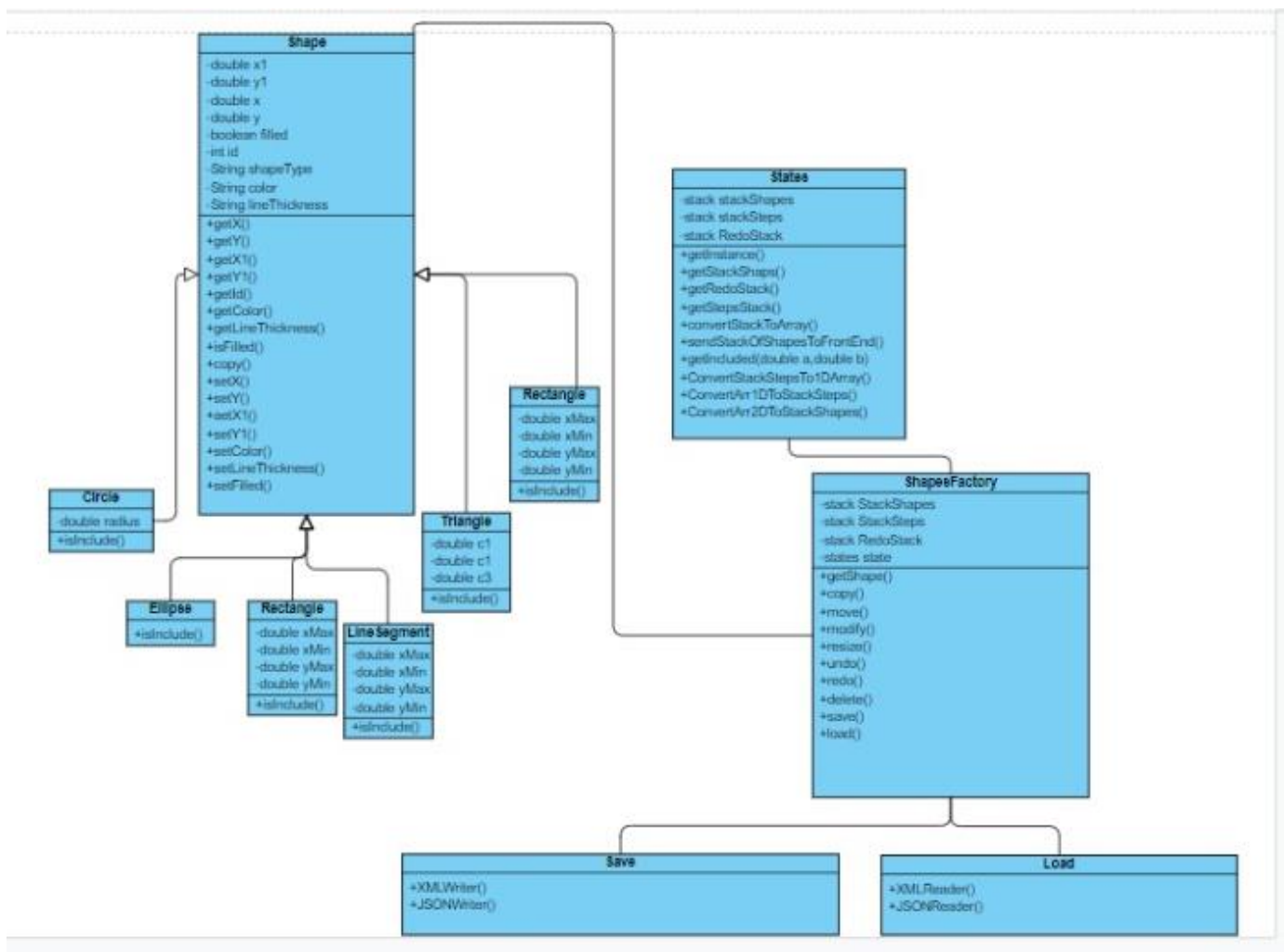
How to run the code :

Open the command prompt or inside a vs-code terminal write vue.ui.

If you opened the command don't close it , this will take you to the browser where you have to import the vue folder of our project then turn in the serve from the icon run task , then you have to run the spring boot with the port written In the properties file inside it , don't close it will running the app, go to the vs-code and start running the project .

Make sure that json library is installed in your computer or you cam import it manually from "json-simple-1.1.1.jar" that is located in the "painteBackEnd" folder

UML diagram



How we have applied the required design pattern in our code :

1- Singleton design pattern :

We have the states class which is singleton class contains three stacks (stack of shapes, stack of steps ,stack redo) these stakes controls the hole objects drawn in this project and all the steps taken until reaching the current shape such as modifying steps. It has to be singleton because we don't have to take multiple objects of it , only one object is enough to control the whole project from the same three stacks .

2- Factory design pattern:

We used it to take the objects of the shape class children such as circle , rectangle ,.....etc .

Why to use such a technique , to make getmapping methods to the frontend to call while it needs to take an object from the back end also to make any modify for the objects that drawn .

So the factory of shapes class is the rest controller one and the frontend deals only with it .

3- Prototype design pattern :

The main use of this pattern is to be able to clone any object so we used it inside each shape children class in function copy to be able to have another object with the same features of the current object , so we use it to achieve the copy feature .

4- Mvc :

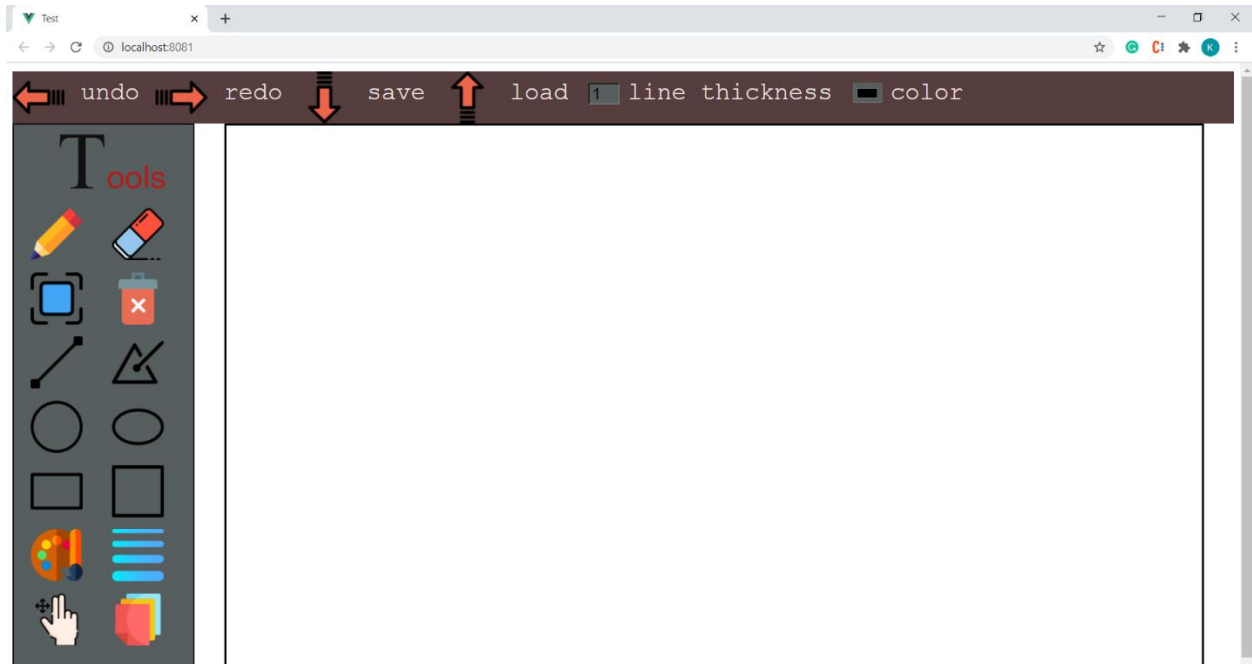
Model view controller : the model is the shape parent class the controller is the shape factory class , the view is our vue front end project .

Design decisions we have made :

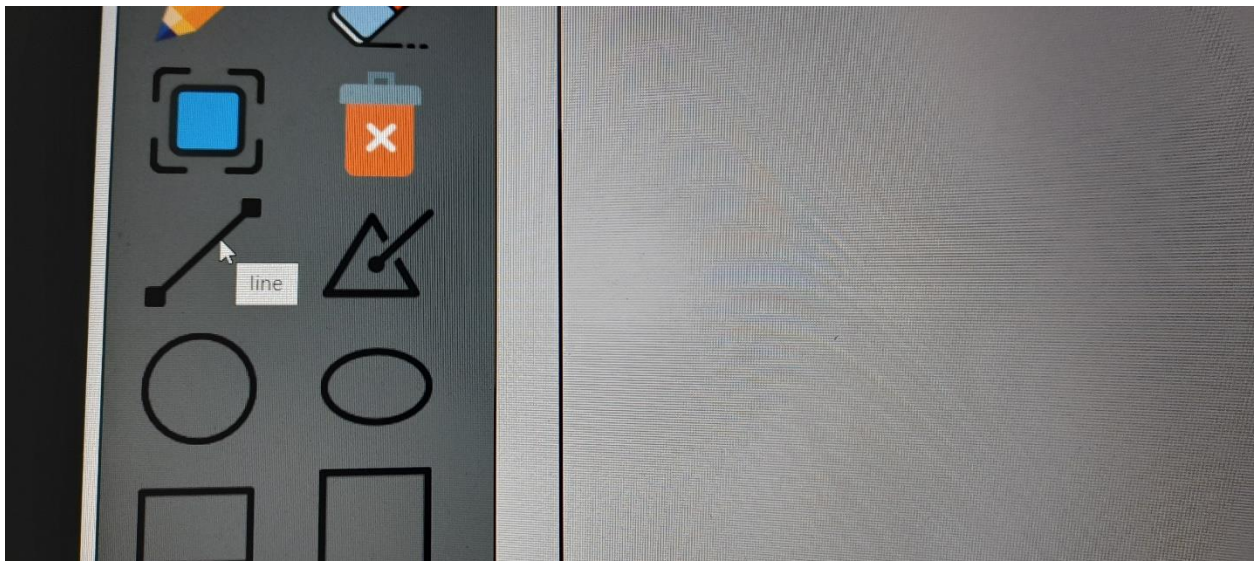
- 1- To select a line and do any modify on it we make an assumption that you will click around 100 from the perpendicular from the point to the line .*
- 2- If you choose any modify icon and then you made a random click that did not include any shape you have to make another random click to be able to use the feature again.*
- 3- If you delete a shape then you want to restore it we consider it as redraw order so you have to use the redo icon.*
- 4- In the resize feature you enter in the dialog box the furthest x and y position in the resized shape and you also can resize while you are drawing with drag and drop features .*

User Guide

When you run the program this UI will appear (make sure to follow the steps written in How to run the code section)



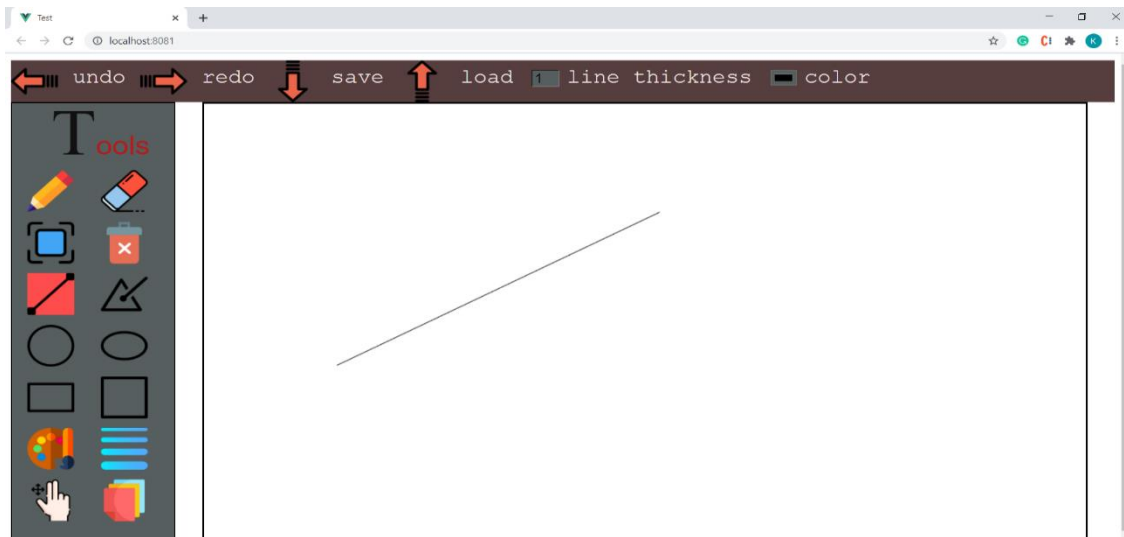
***If you stand on any icon the name of the icon will appear**



Each icon is activated until you click on another icon.

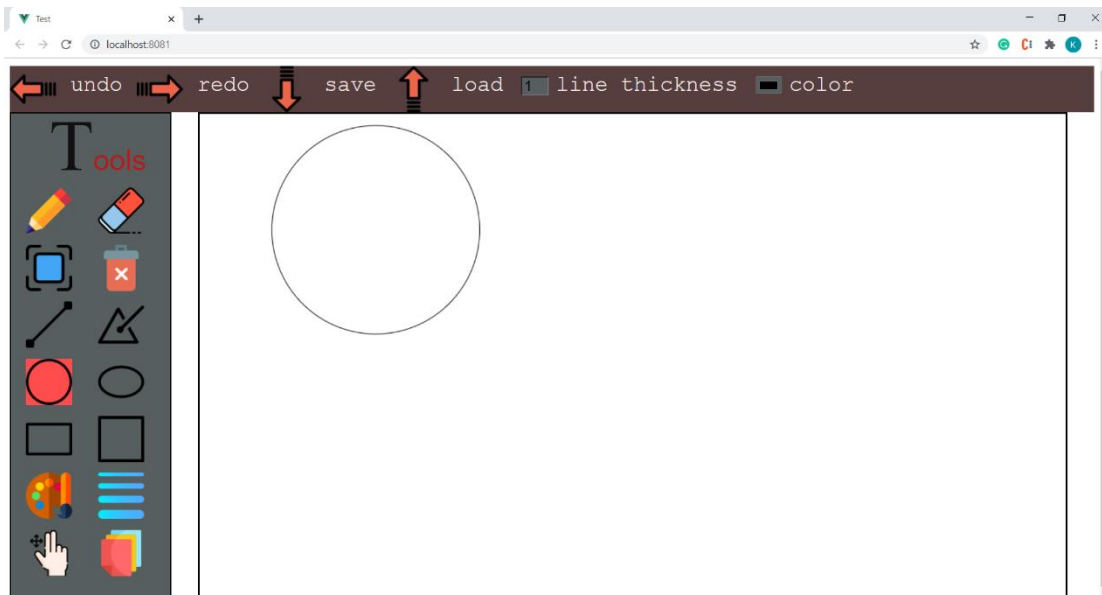
*Line

To draw a straight line click on the line icon ,then on the canvas click on the mouse where you want the first point then drag the mouse and then release the mouse at where you want the end point to be.



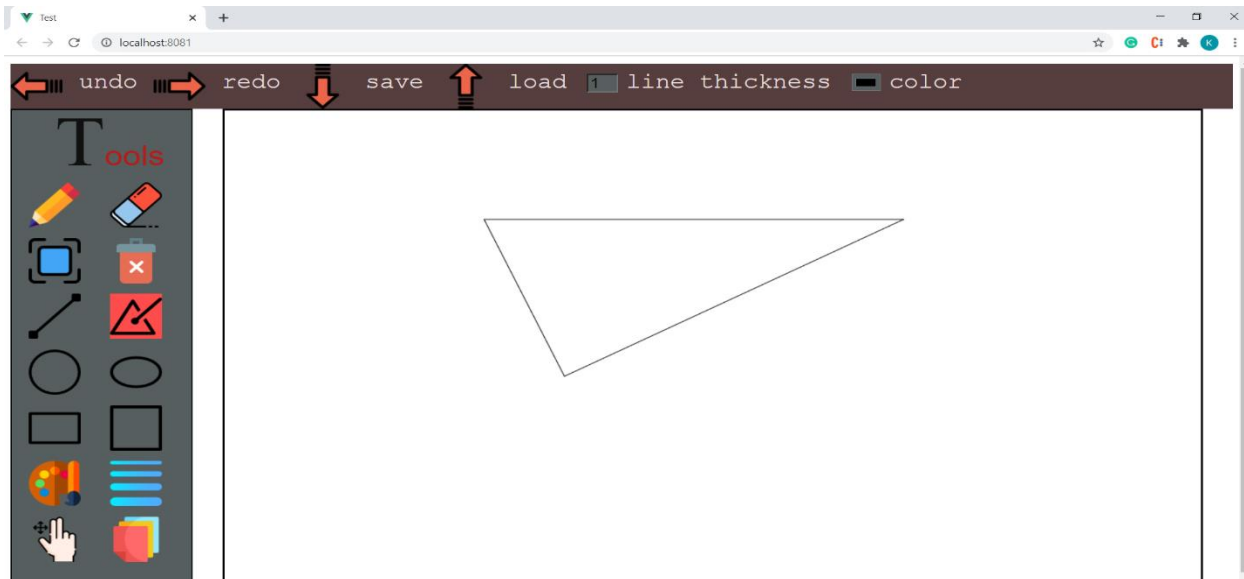
*Circle

To draw a circle click on the circle icon , then on canvas click on the mouse where you want the center of the circle and drag , then release the mouse at where you want the end point to be.



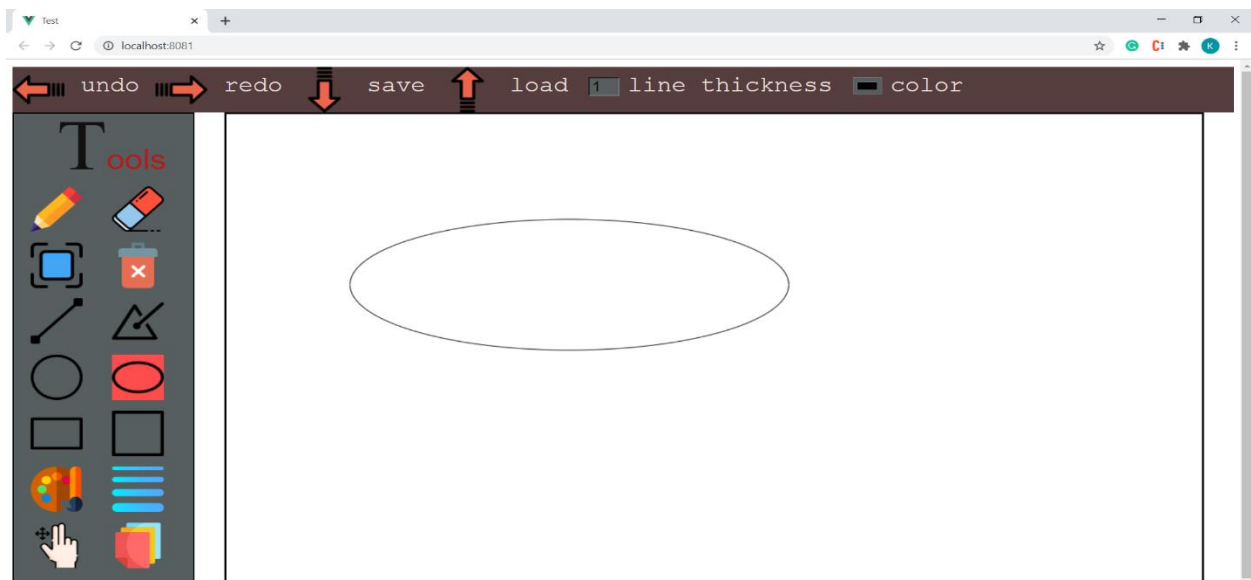
*Triangle

To draw a triangle click on the triangle icon ,then on the canvas click on the mouse where you want the first point then drag the mouse and then release the mouse at where you want the end point to be.



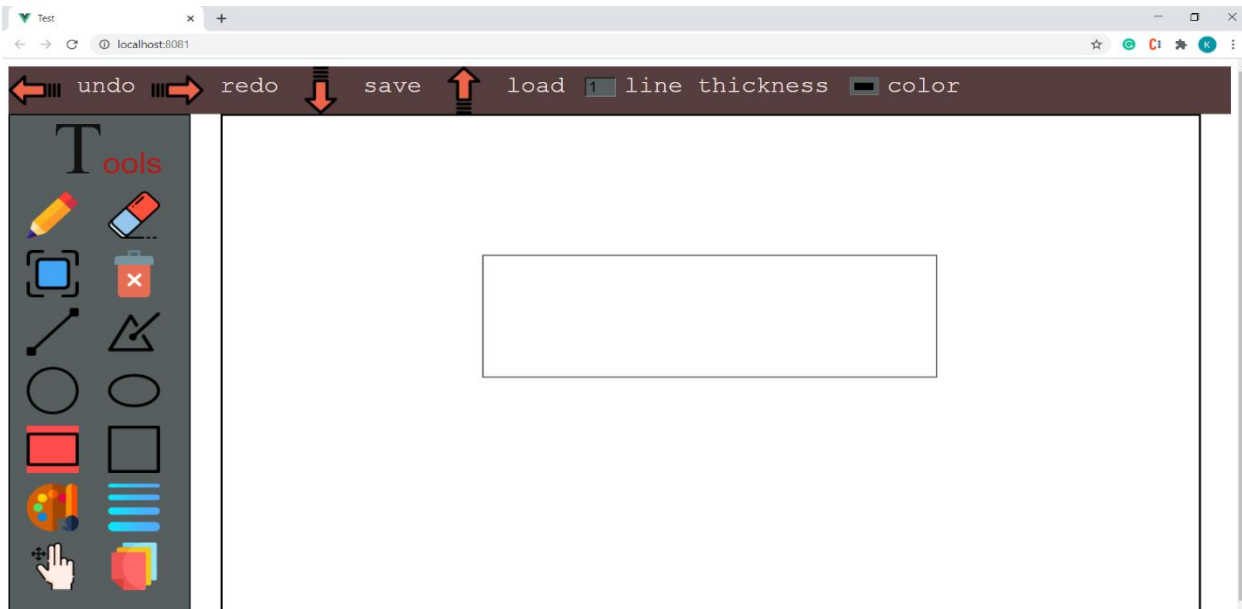
*Ellipse

To draw an ellipse click on the ellipse icon ,then on the canvas click on the mouse where you want the first point then drag the mouse and then release the mouse at where you want the end point to be.



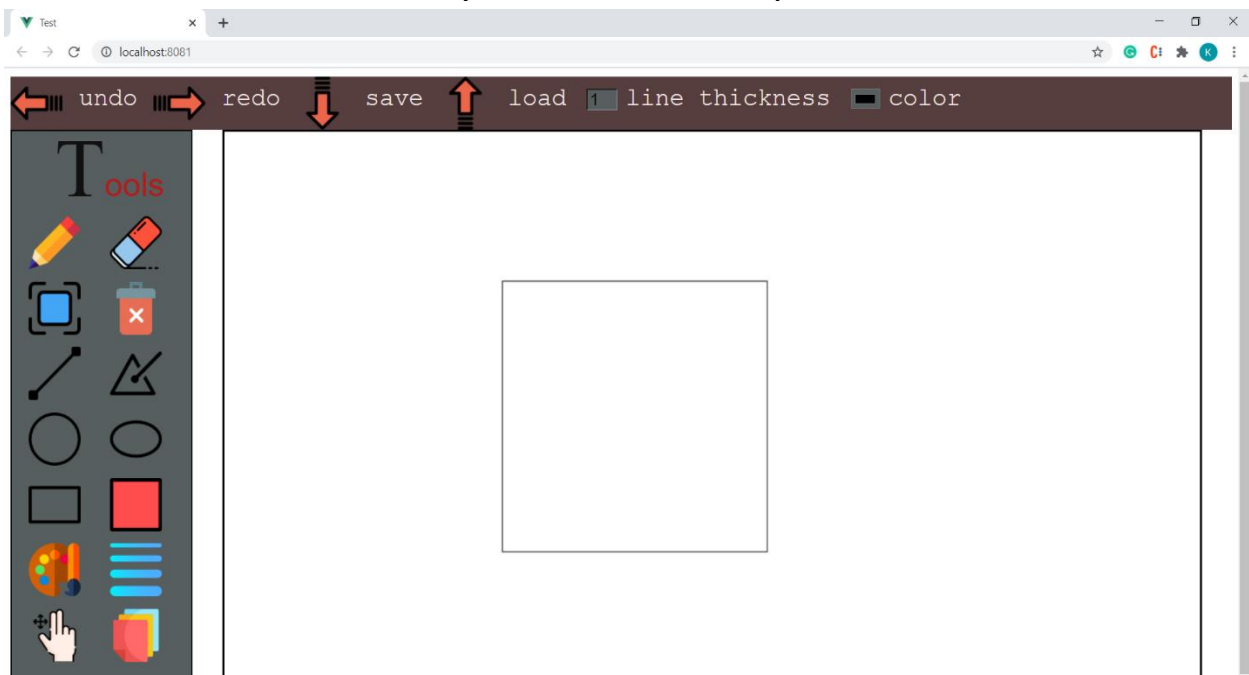
*Rectangle

To draw a rectangle click on the rectangle icon ,then on the canvas click on the mouse where you want the first point then drag the mouse and then release the mouse at where you want the end point to be.

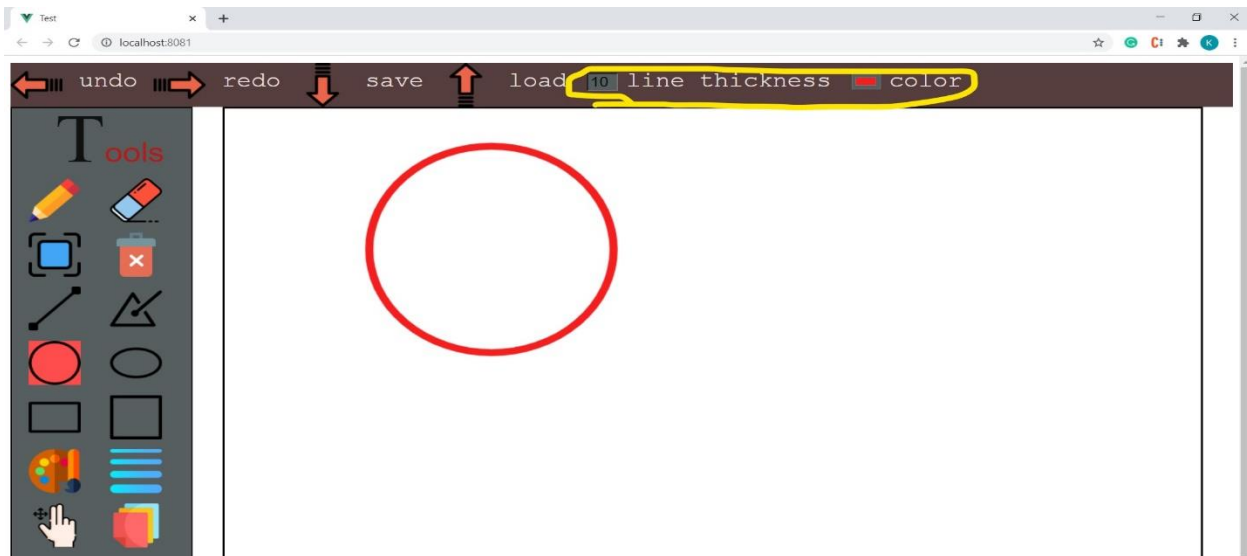


*Square

To draw a square click on the square icon ,then on the canvas click on the mouse where you want the first point then drag the mouse and then release the mouse at where you want the end point to be.



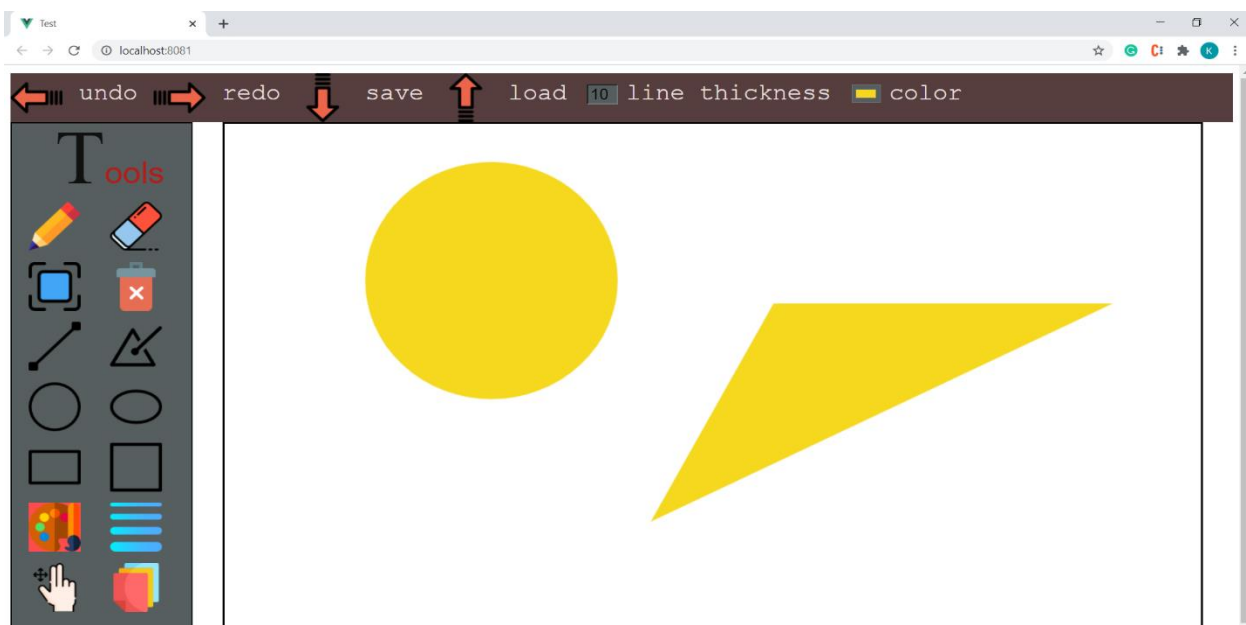
***Each shape will be drawn by the line thickness and the color that is set at the top of the window.**



***Color-palette**

If you want to fill a shape simply click on the color-palette icon and set the color field- present at the top of the window- to the color you want and then click inside the shape you want to color

Note: To color straight lines you need to click at a distance less than 100 from the straight line.

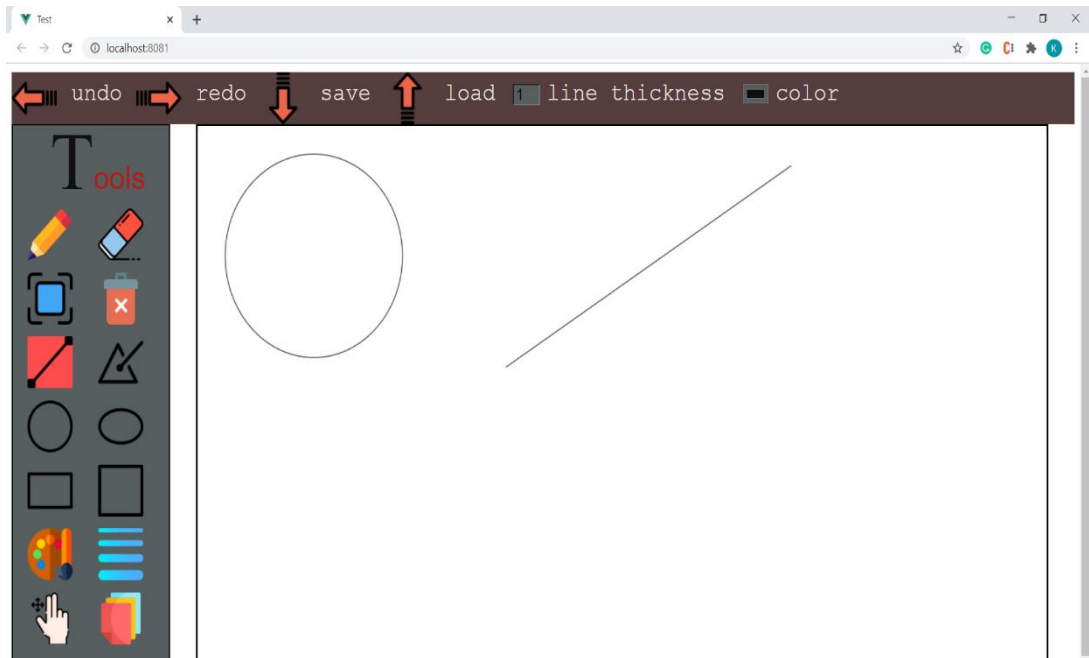


*Line Thickness

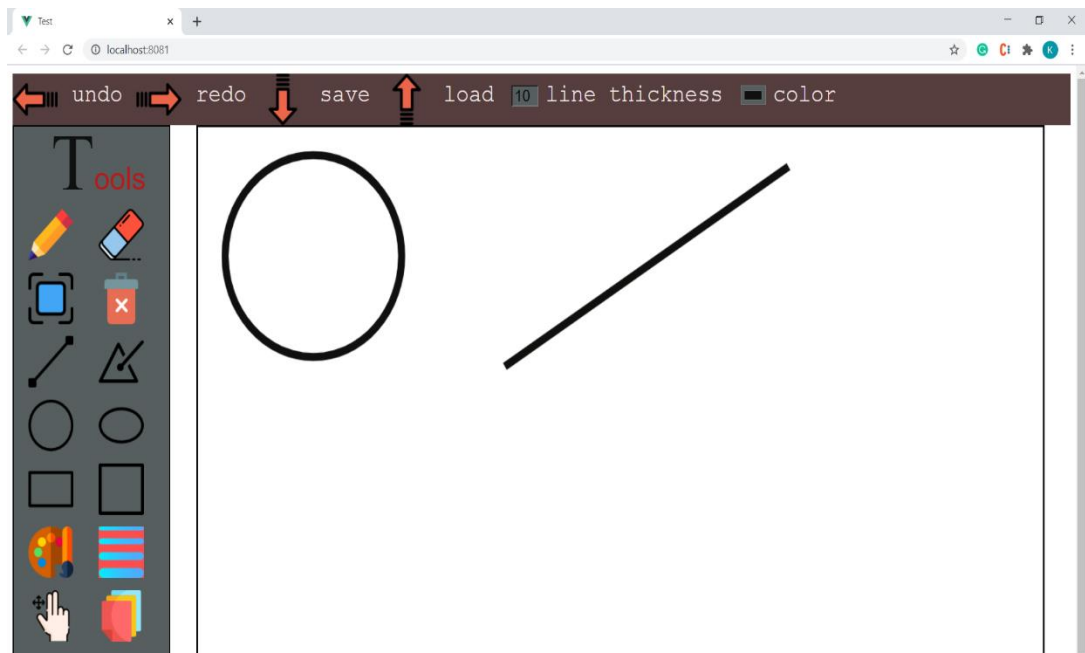
If you want to change the line thickness of a shape simply click on the line-thickness icon and set the line thickness field- present at the top of the window- to the thickness you want and then click inside the shape.

Note: To change the line thickness of straight lines you need to click at a distance less than 100 from the straight line.

Before



After

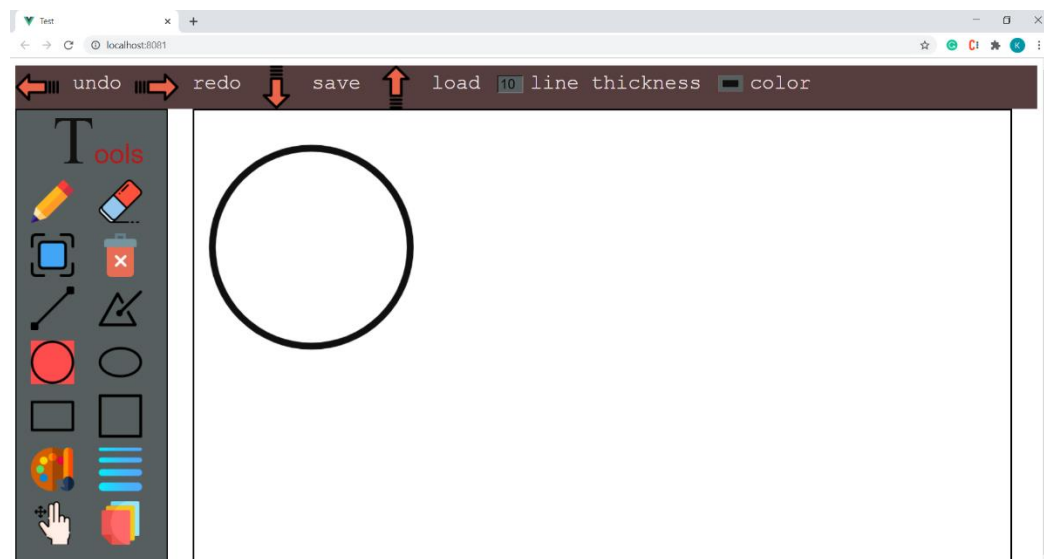


*Move

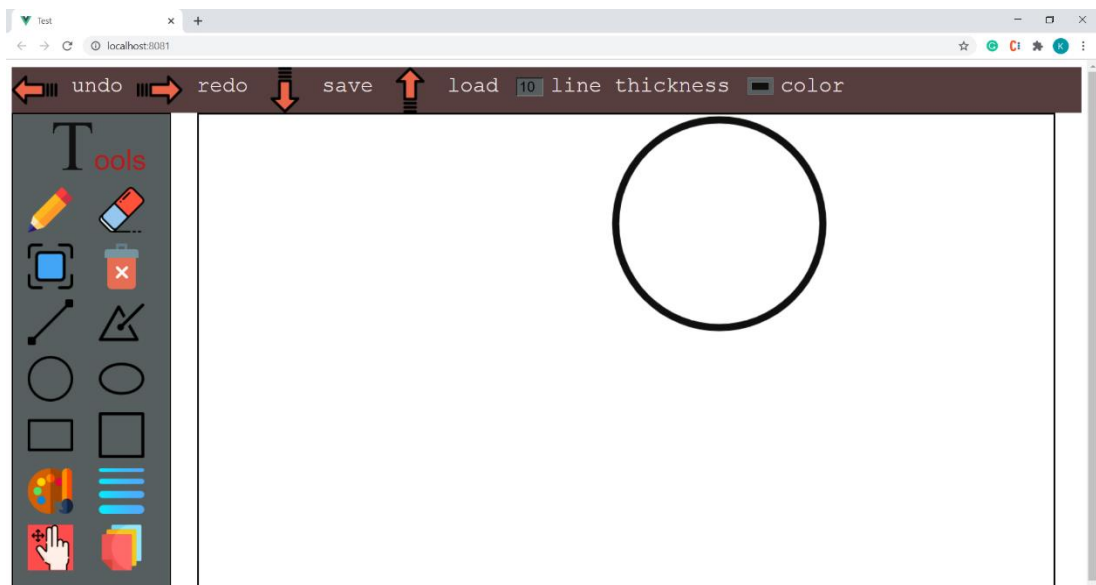
To move a shape click on the move icon and then click inside the shape you want to move and click another one at the place you want to move the shape to.

Note: move requires two clicks one inside the shape and the other on the point you want to move the shape to , if you clicked at any point (outside a shape) by accident you have to click another click to reactivate the method.

Before



After

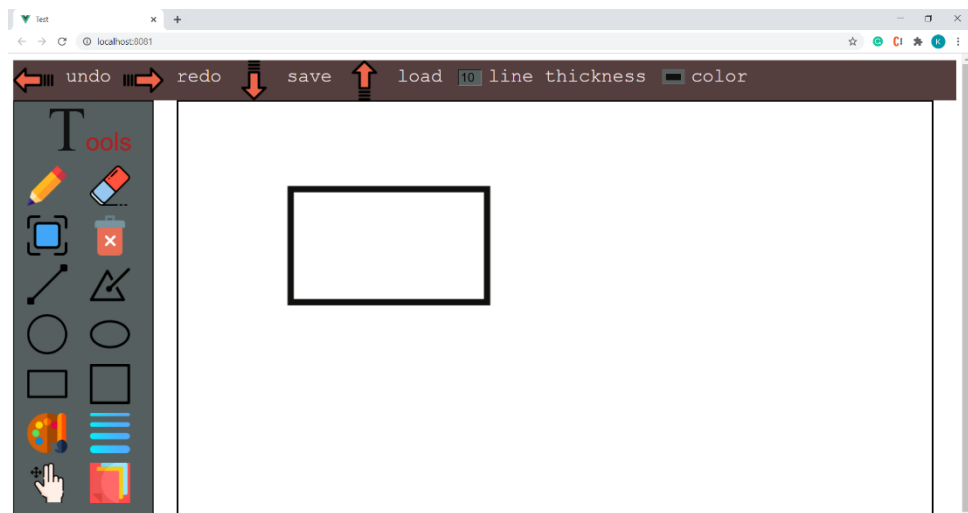


*Copy

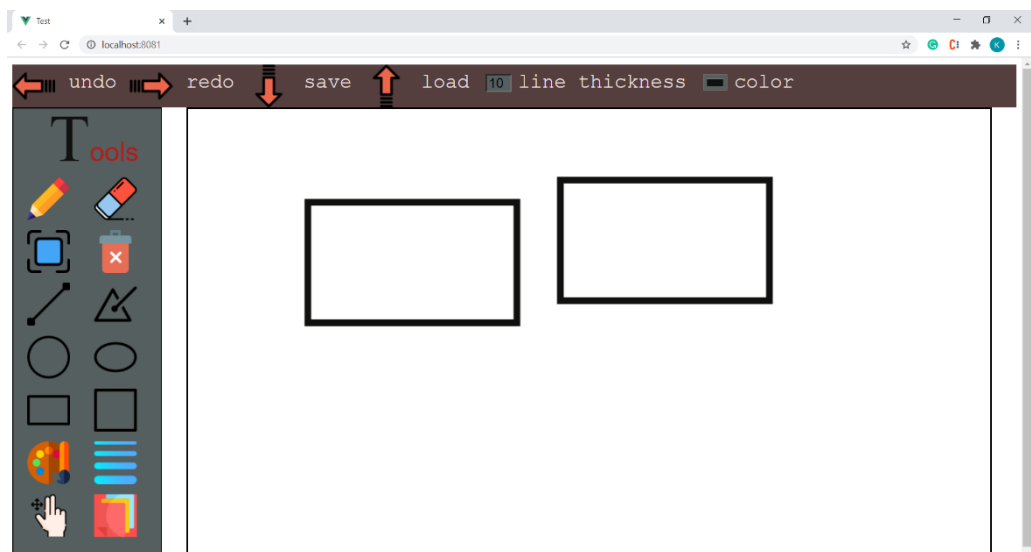
To copy a shape click on the copy icon and then click inside the shape you want to copy and click another one at the place you want to copy the shape to.

Note: copy requires two clicks one inside the shape and the other on the point you want to copy the shape to , if you clicked at any point (outside a shape) by accident you have to click another click to reactivate the method.

Before



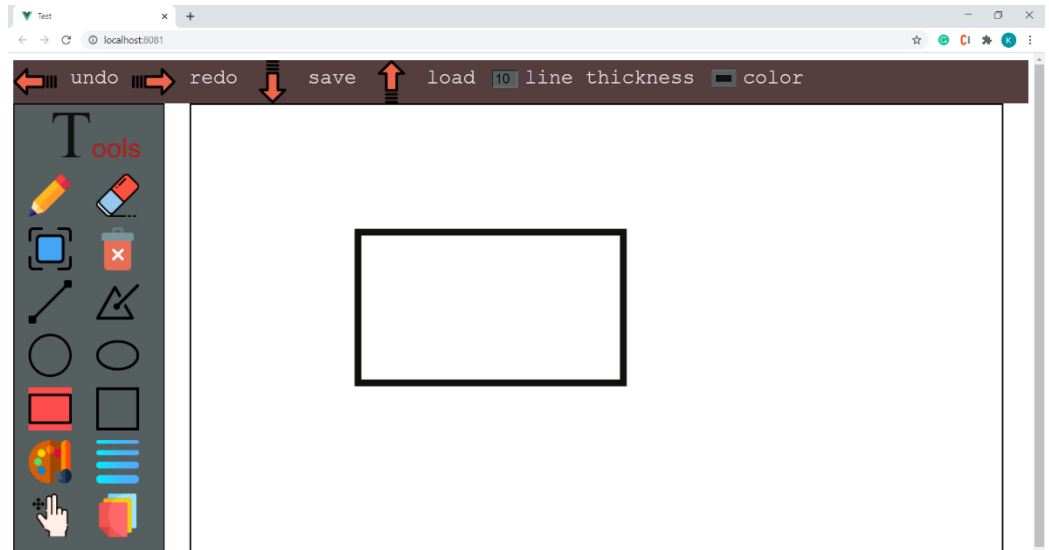
After



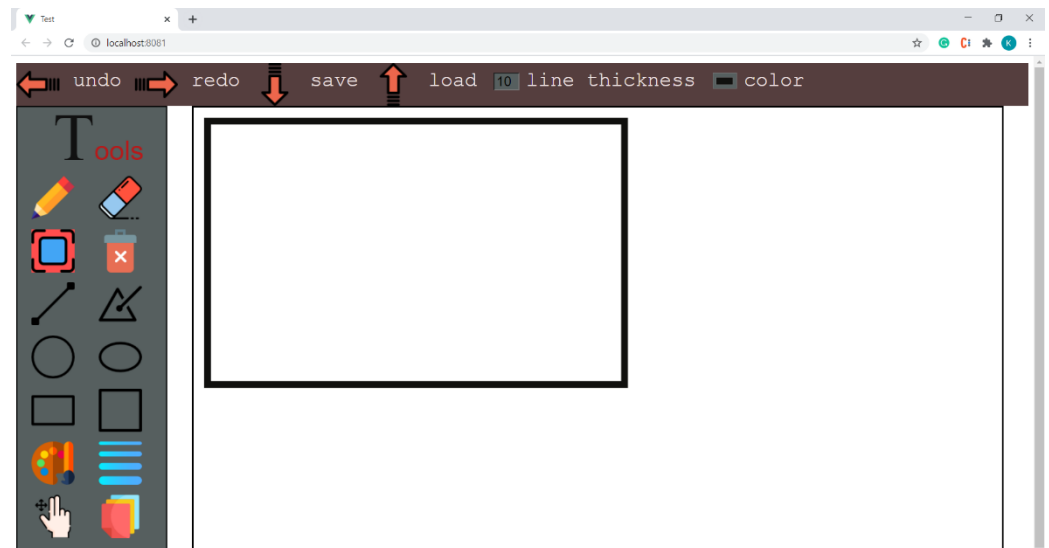
*Resize

To resize a shape click on the resize icon and then click inside the shape you want to resize a dialog box will appear where you can enter the furthest x and y position in the resized shape.

Before



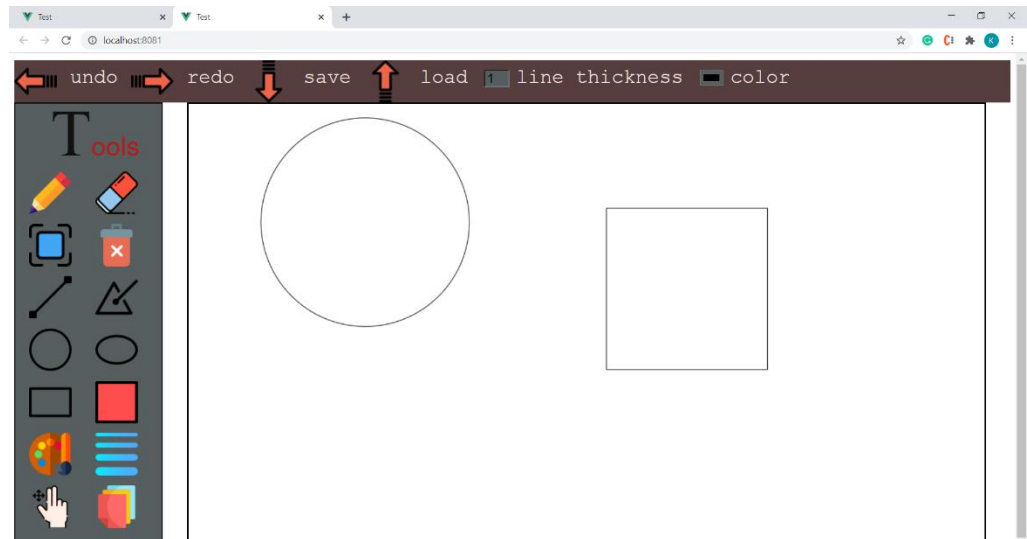
After



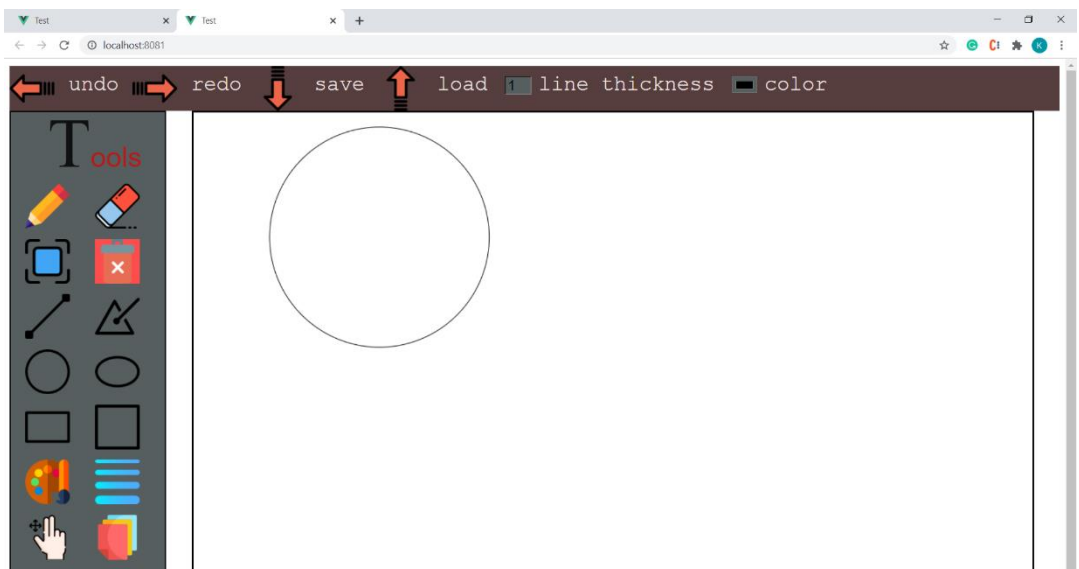
*Delete

To delete a shape click on the delete icon and then click inside the shape you want to delete .

Before



**After
deleting
the square**



***Note: Resize,delete,color, line-thickness,move and copy are applied to all shapes that is included in the point you clicked on.**

***Undo, Redo ,Save , load**

To undo, redo , save or load simply click on the icons that is located at the top of the window.