



## PAINT WEBSITE

### MEMBERS

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### Lap3 OOP

# Paint project

## How to download the project ?

- **GitHub Repositories :**

[RafyHany/Paint: web based application for microsoft paint \(github.com\)](https://github.com/RafyHany/Paint)

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## Instruction to download codes :

- Downloading codes from GitHub repositories
  1. Open your Git Bash terminal.
  2. Cloning Back-End files to your folder :  
“git clone https://github.com/ RafyHany /Paint.git”.

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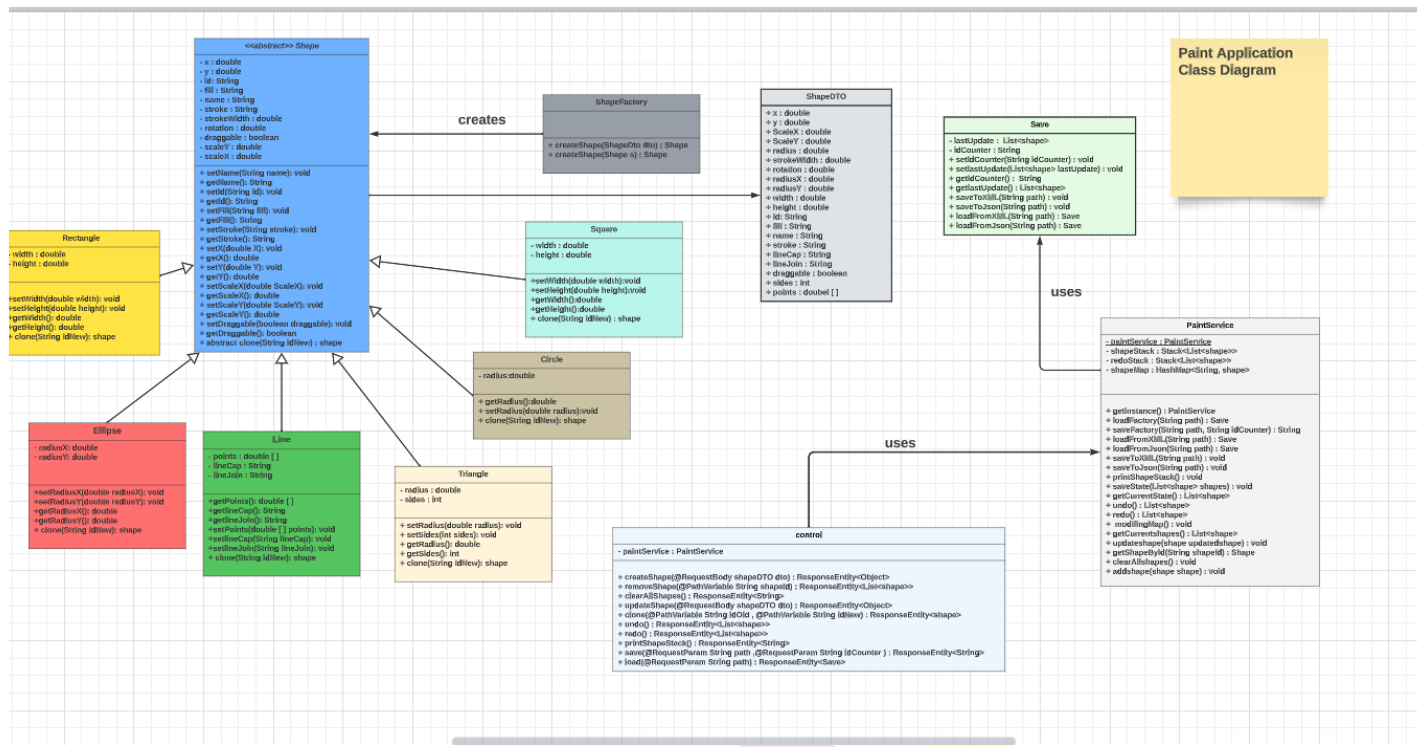
## Instruction to Run Back-End Server and Frond-End server

- Running Back-End codes
  1. Open Back-End files to your favorite IDE to be run.
  2. Use the normal Run button in your IDE.
- Running Front-End codes
  1. Install Node.js from the official website
  2. Open your Command Prompt.
  3. In your Command Prompt “npm install -g @Vue/cli”.
  4. Open Front-End files to your favorite IDE to be run.
  5. install konva in terminal .
  6. “npm install vue-konva konva –save”
  7. Running Vue server from prompt “npm run serve”.

## Full UML link :

- [https://lucid.app/lucidchart/2338aff9-f509-4bff-9419-fb32cb332497/edit?viewport\\_loc=-587%2C48%2C4144%2C1984%2CDUNIB9E80keZ&invitationId=inv\\_150e3f83-e55d-4134-9ca0-a76ddd3728c5](https://lucid.app/lucidchart/2338aff9-f509-4bff-9419-fb32cb332497/edit?viewport_loc=-587%2C48%2C4144%2C1984%2CDUNIB9E80keZ&invitationId=inv_150e3f83-e55d-4134-9ca0-a76ddd3728c5)

## UML snippet :



## Used design patterns :

### 1. Factory design pattern :

- Shape factory :implementing factory design pattern to create all allowable shape according to their names .
- Save factory : to choose the extension of the saved path(json – xml ).
- Load factory : to choose the extension of the loaded path(json – xml ).

### 2. Prototype design pattern:

- We implemented prototype design pattern to clone all allowable shapes instead of creation of it again with the same attributes except the ID of the shape and a shift in x and y .

### 3. Singleton design pattern :

- paint service has to be singleton to return the same objects created and one to be used through program.

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### Decisions :

- using konva library for drawing in front-end.
- if you make undo then create or update any another shape then redo can't be applied as if applied no change occur(logically assumption).
- Design pattern mainly designed in back-end and we can find factory design pattern in front-end to determine the shape.
- Undo and redo mainly depend on back-end.
- Copy , erase , erase all mainly depend on back-end.
- Save and load depend on backend.
- You can load a old file as you want.
- You can load many files at once .

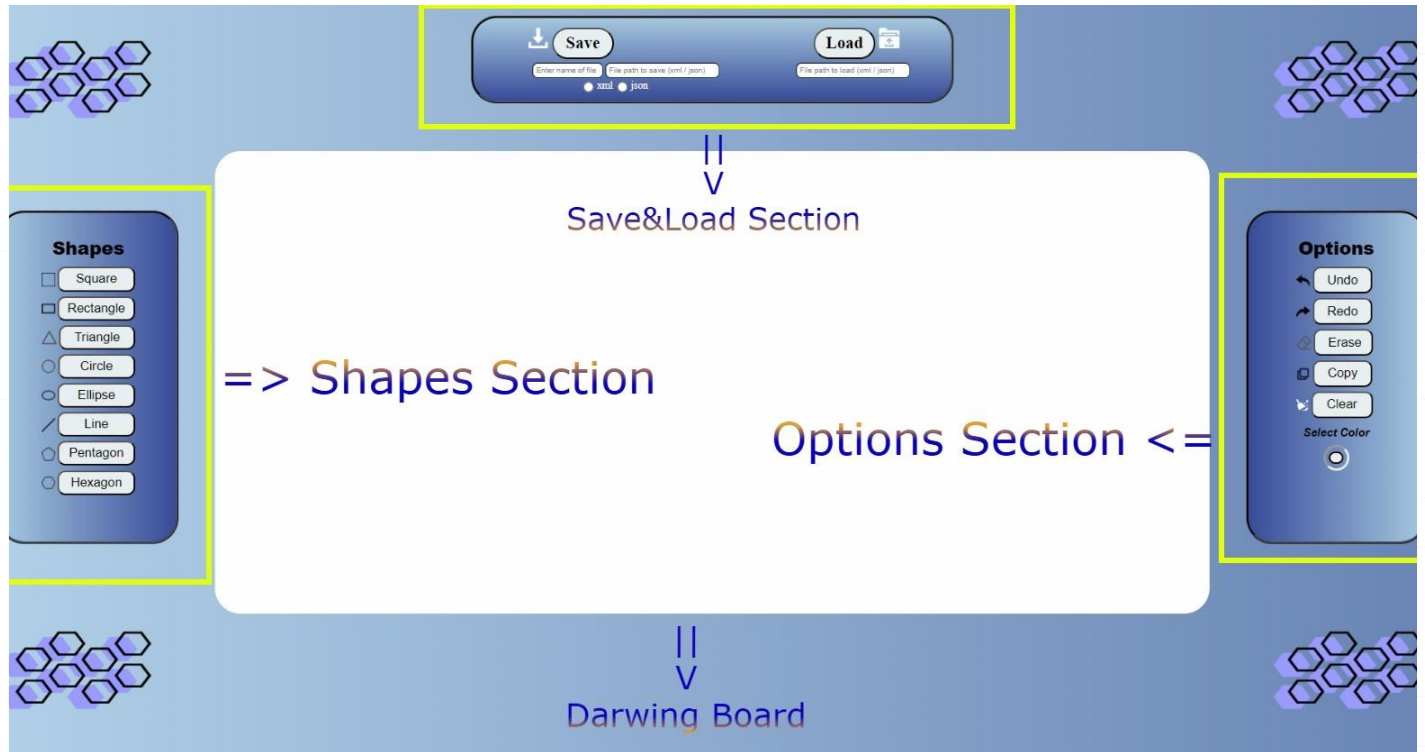
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### Ui snippets :

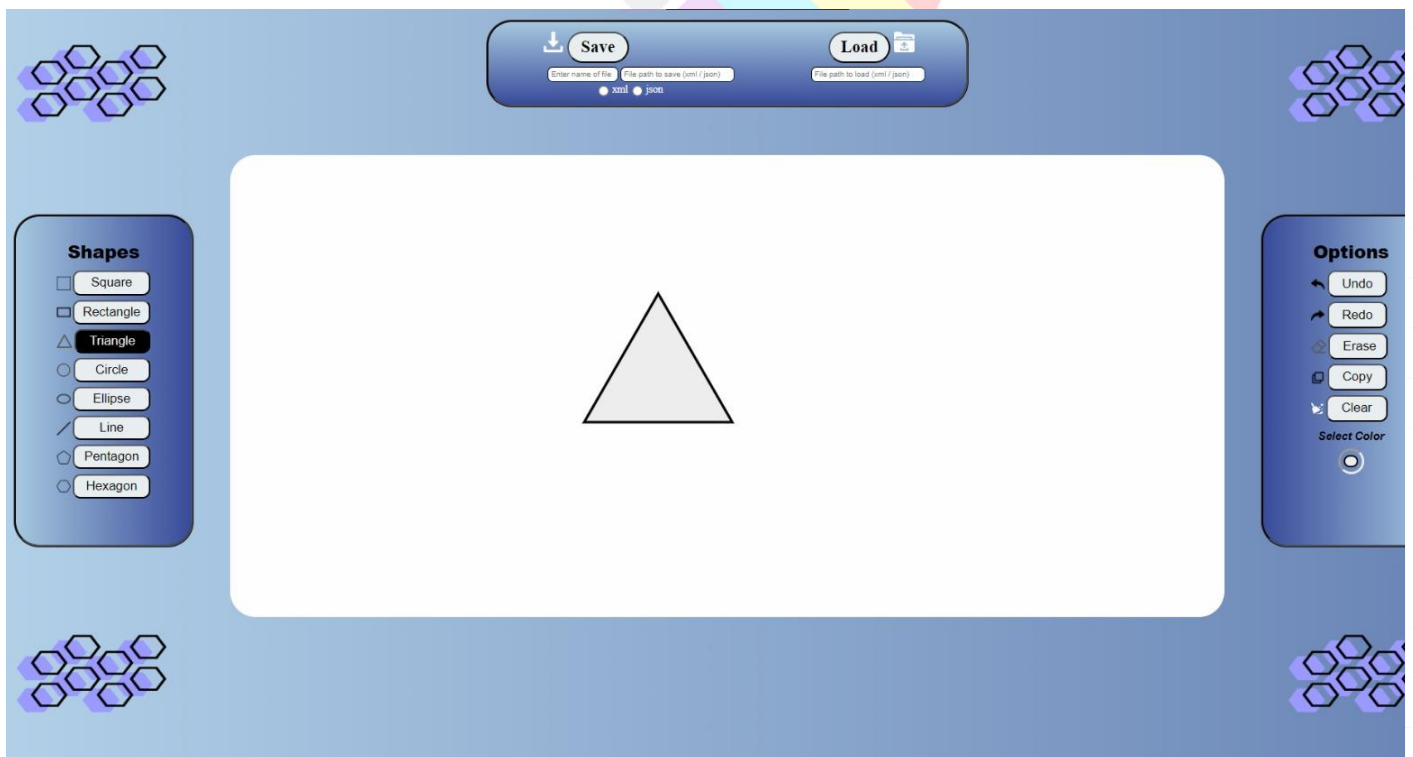
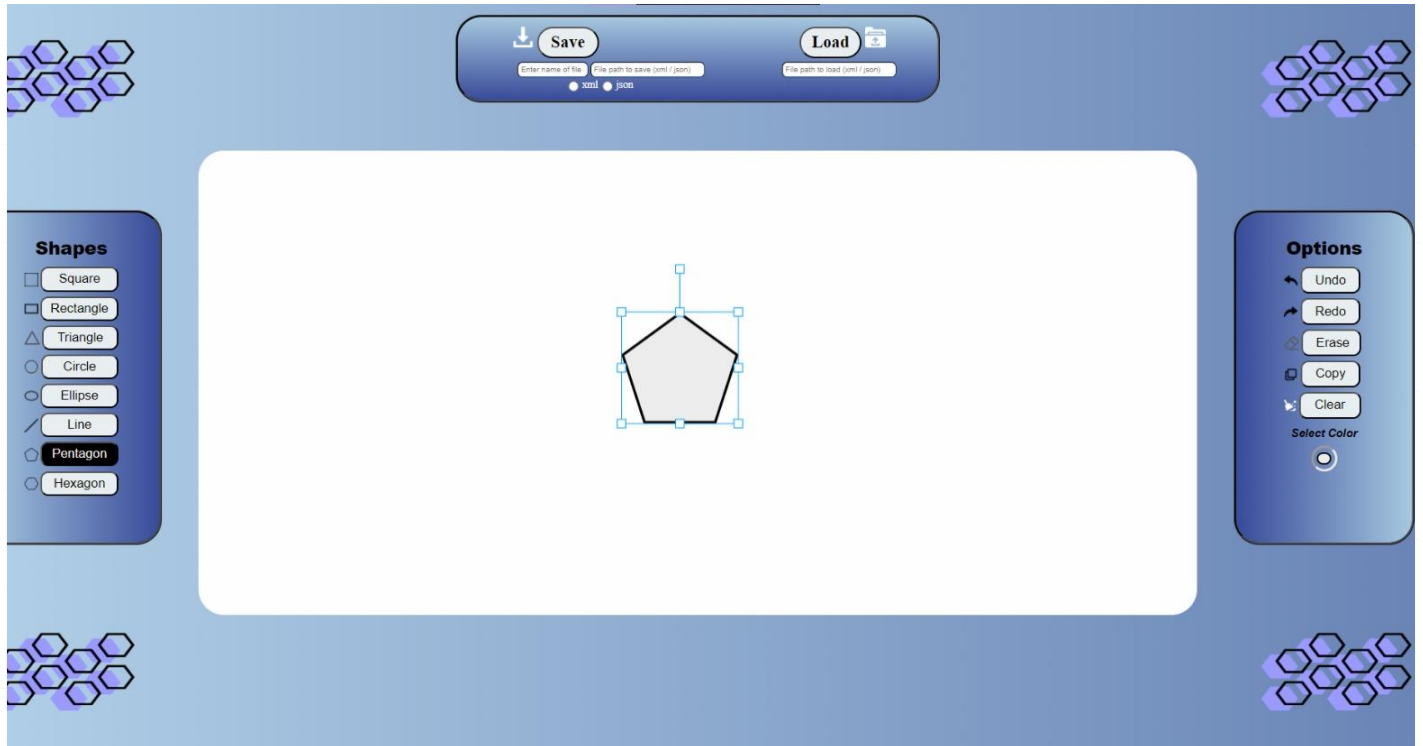


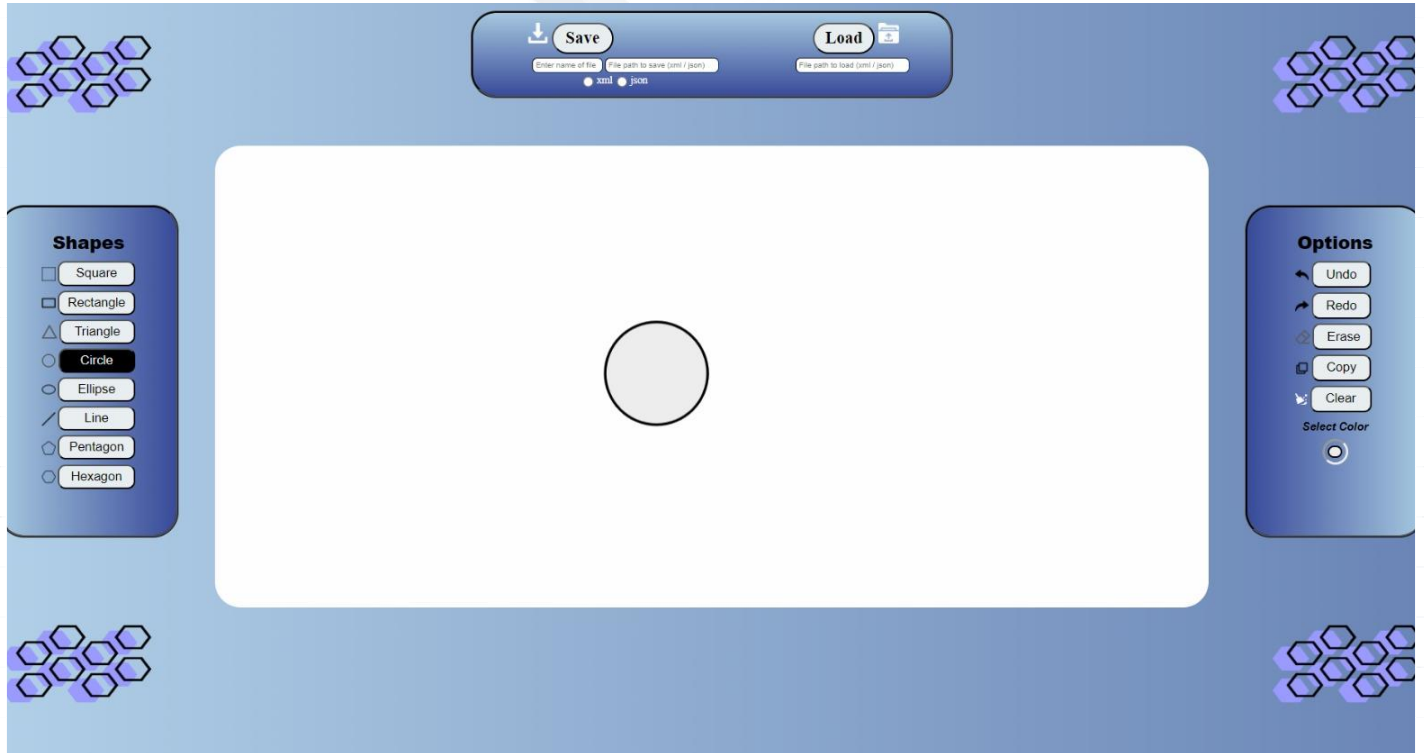
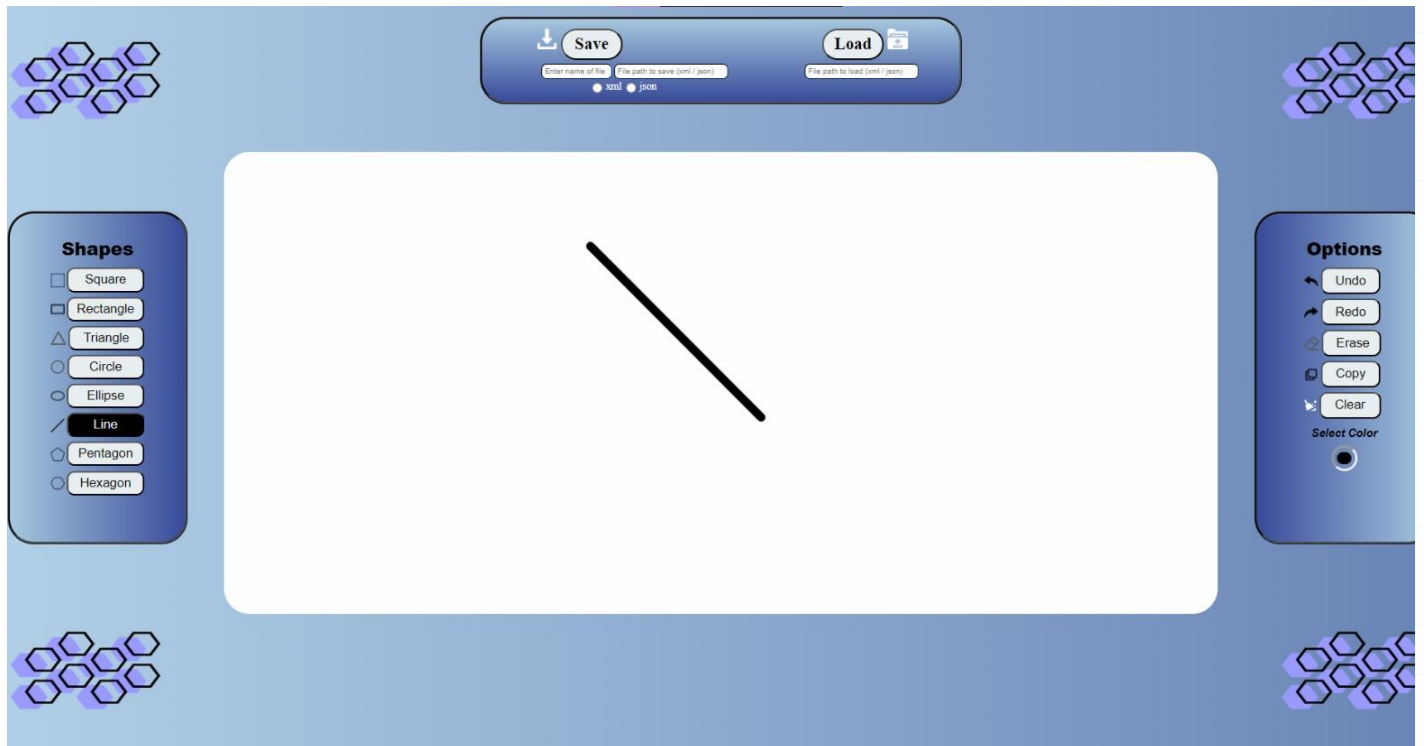
## User guide snippets :

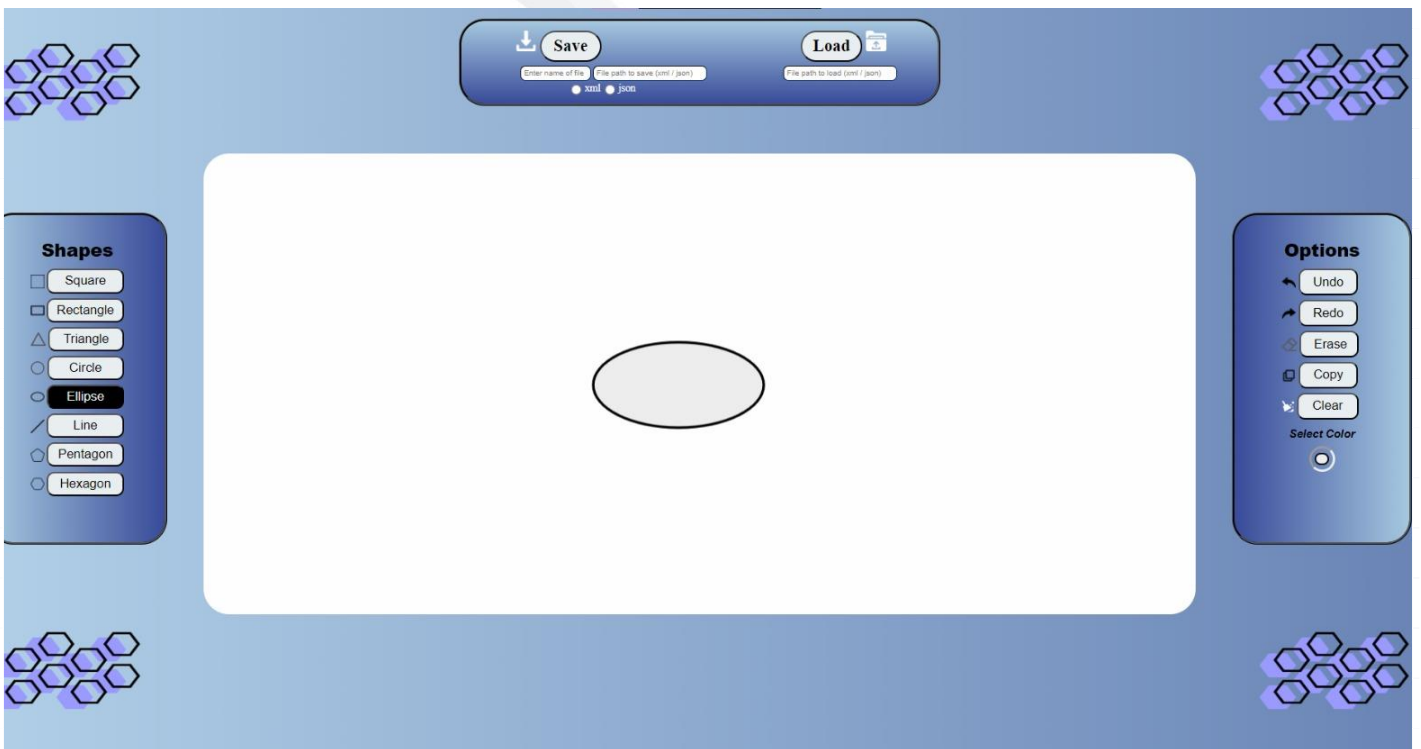
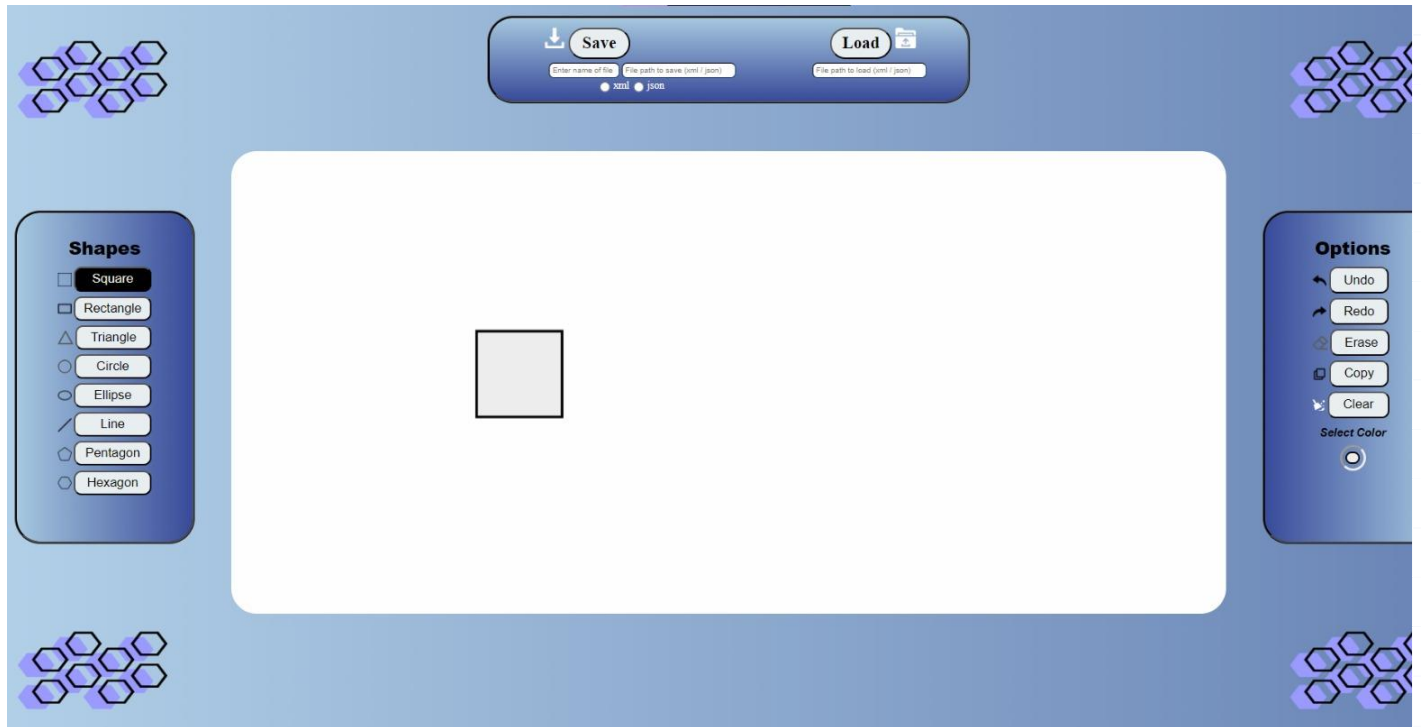
- Guide for all website :



- **Drawing a shape :** by clicking on any shape button, then clicking on the drawing board where you want to draw the shape.

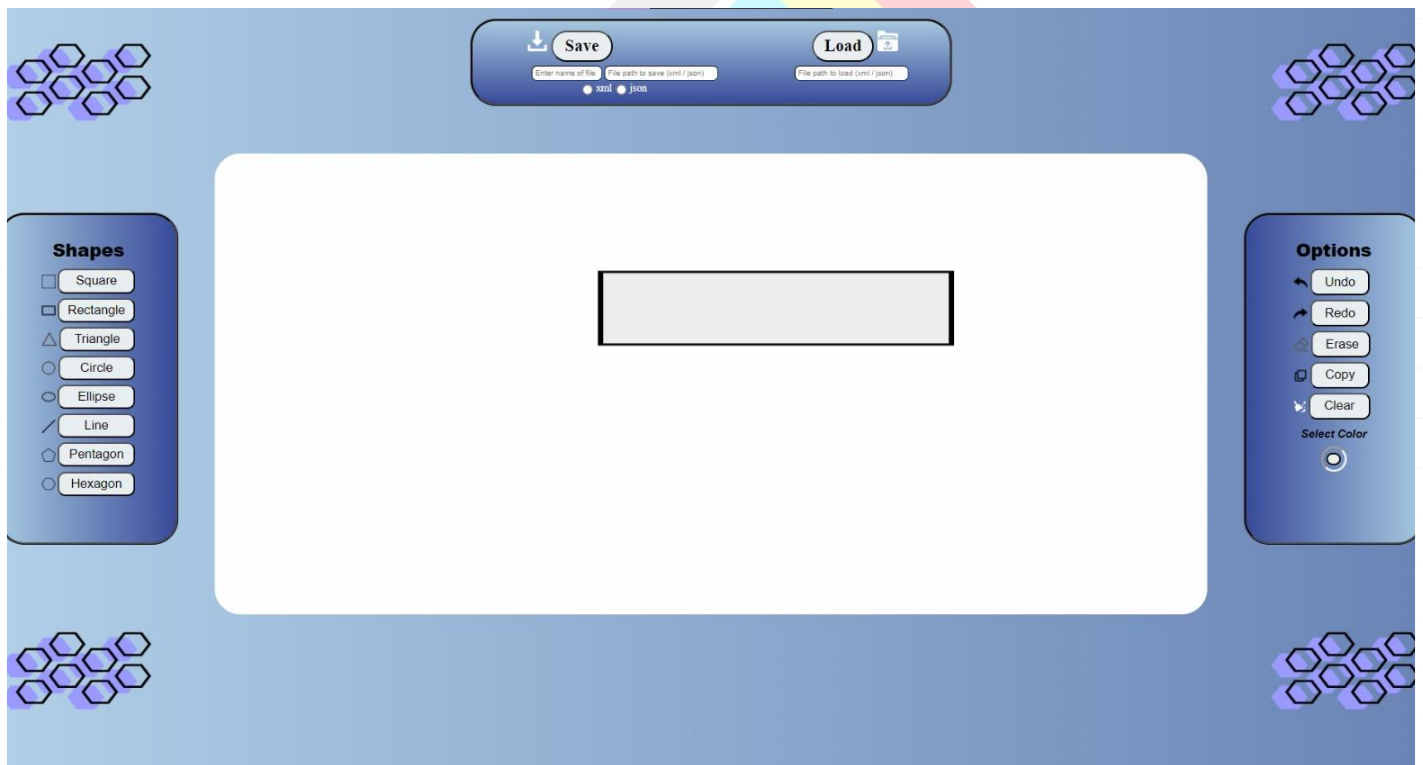
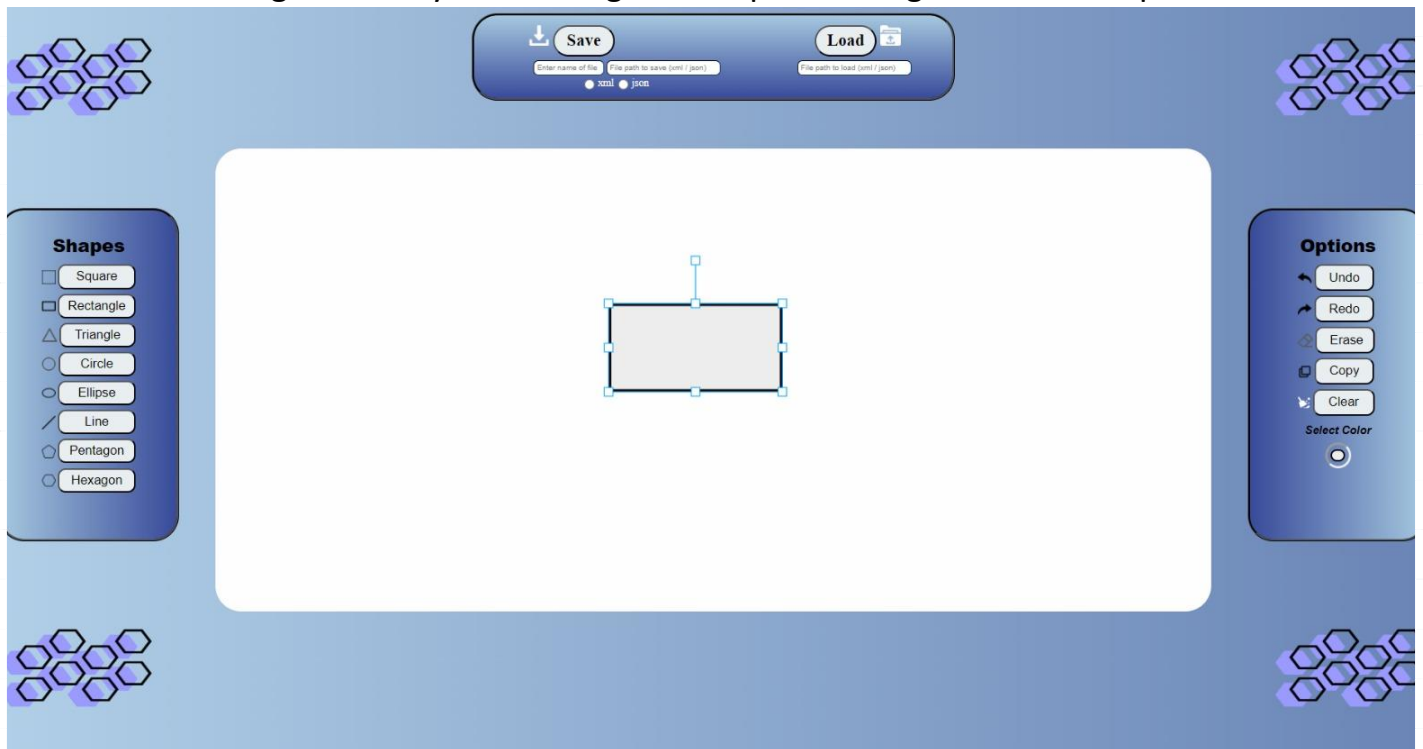




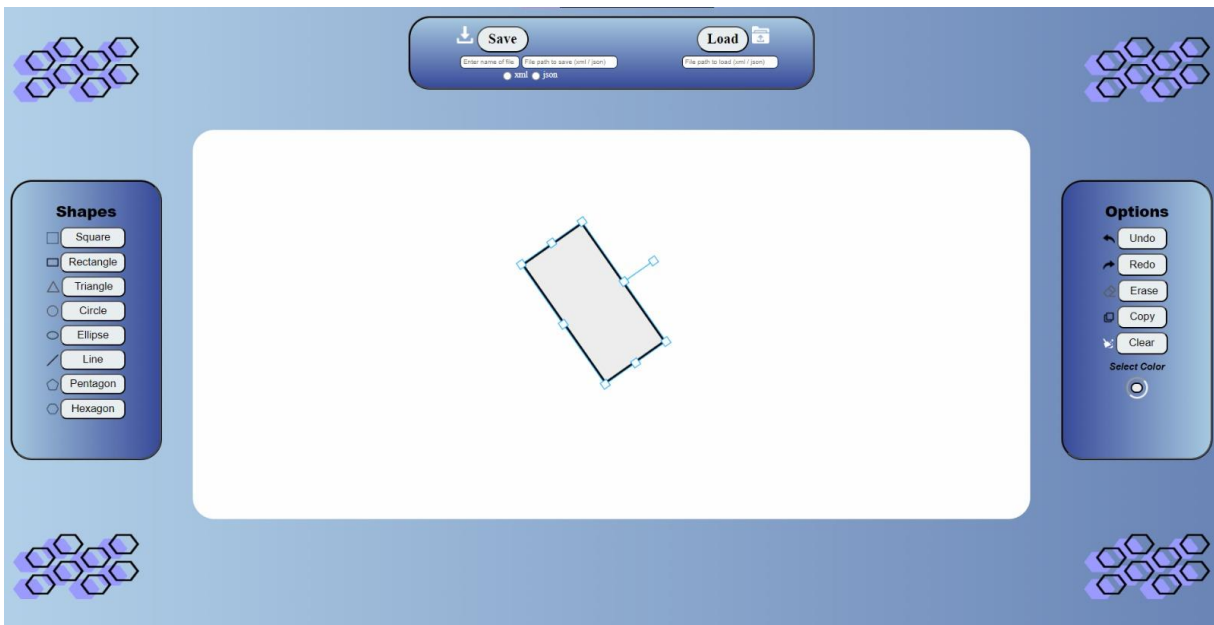




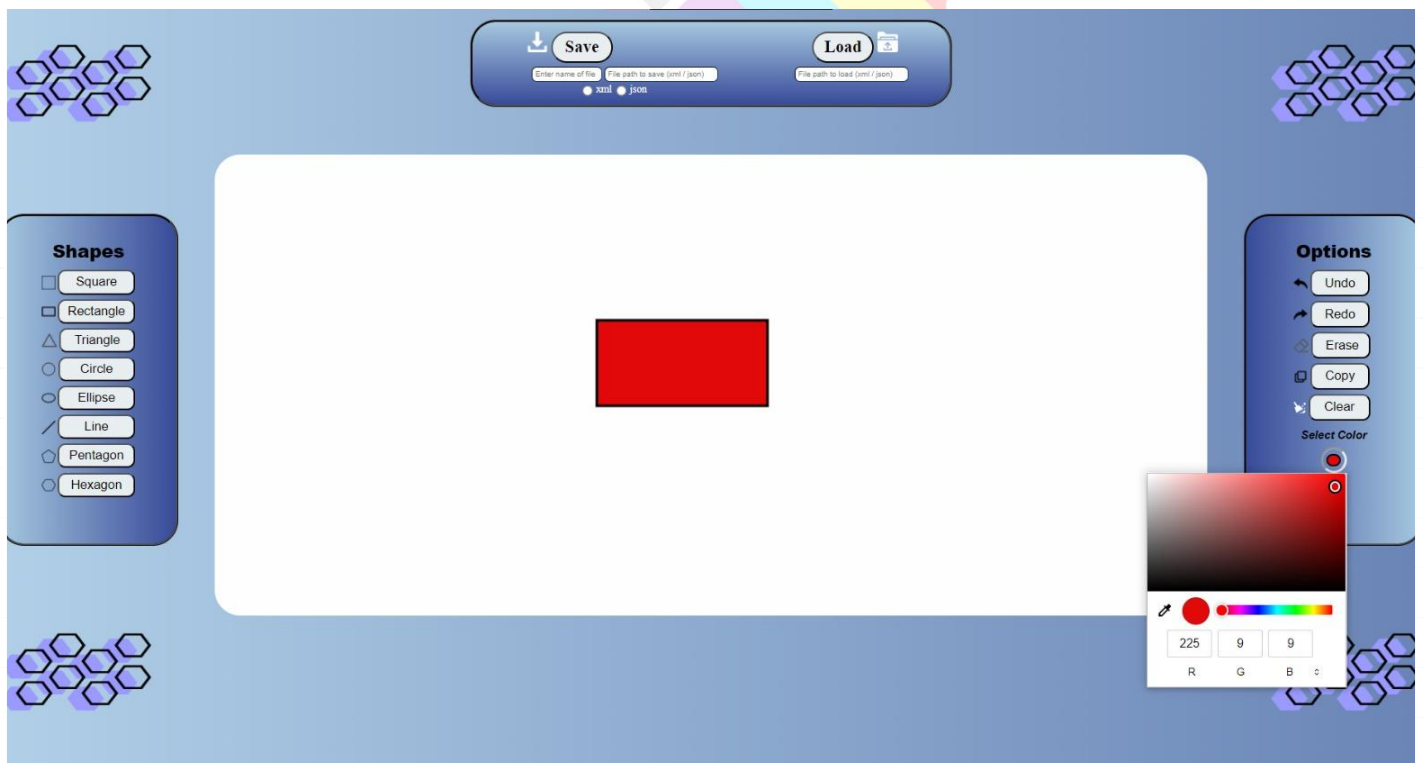
- **Resizing shape :** You can resize your shape by clicking on the shape, 9 boxes appear surrounding it where you can drag and drop according to the size required



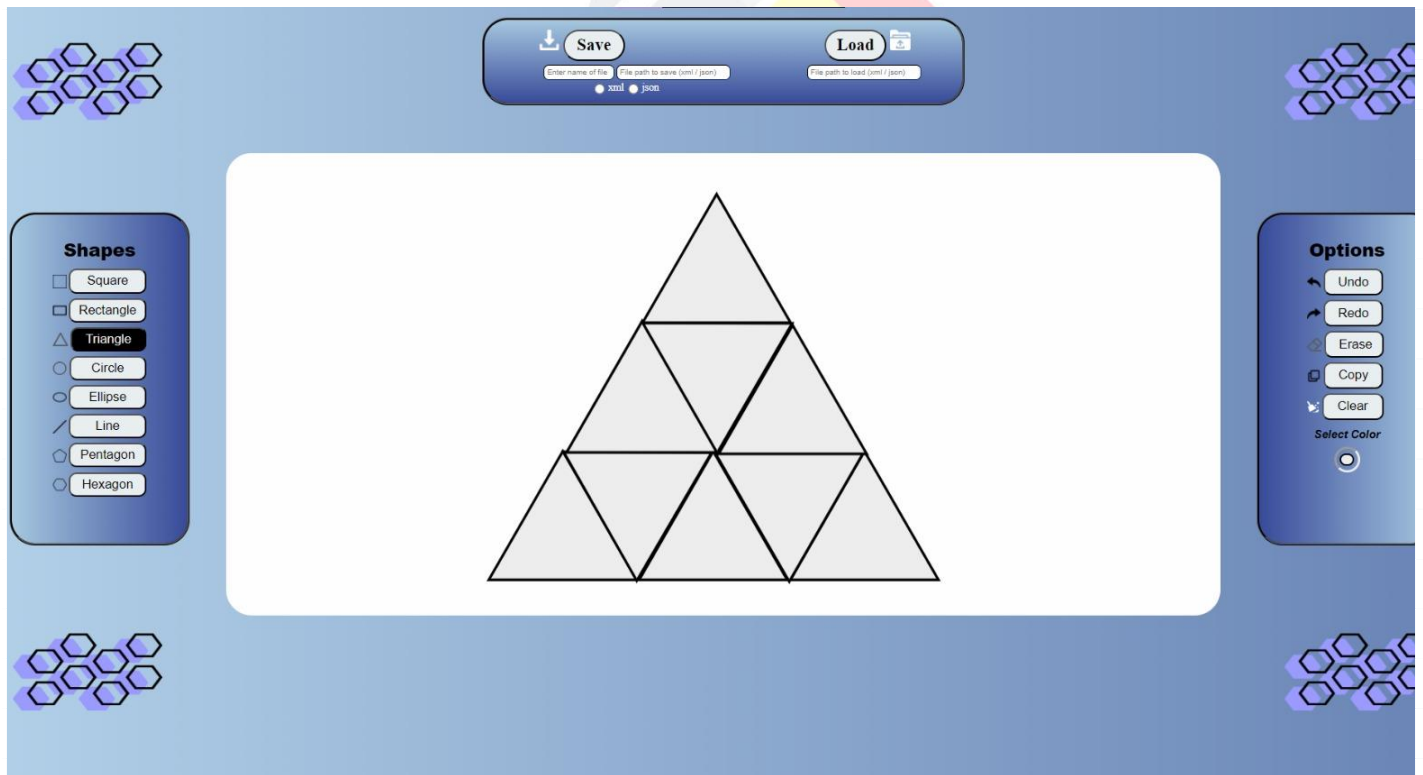
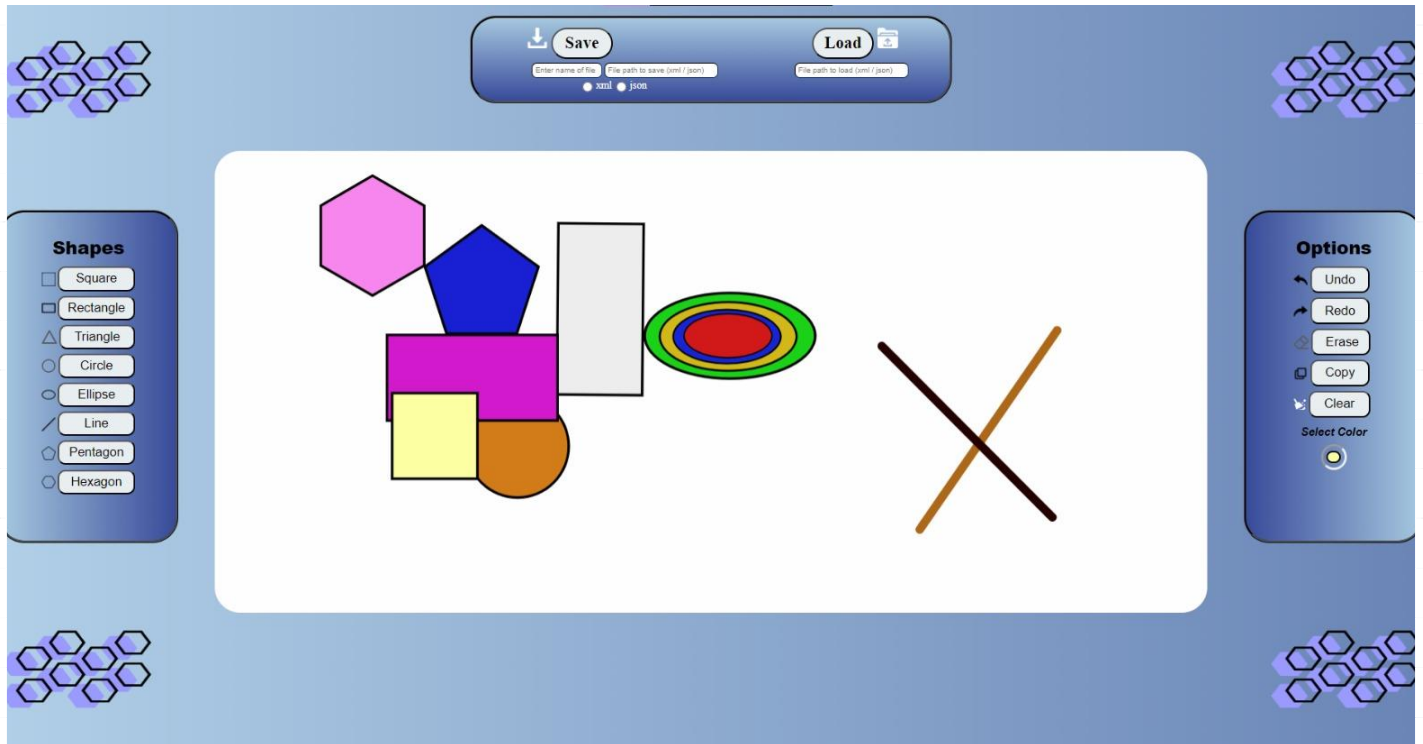
- **Rotating shape** : You can rotate your shape by clicking on the shape, 9 boxes appear surrounding it where you can drag and drop according to the size required.



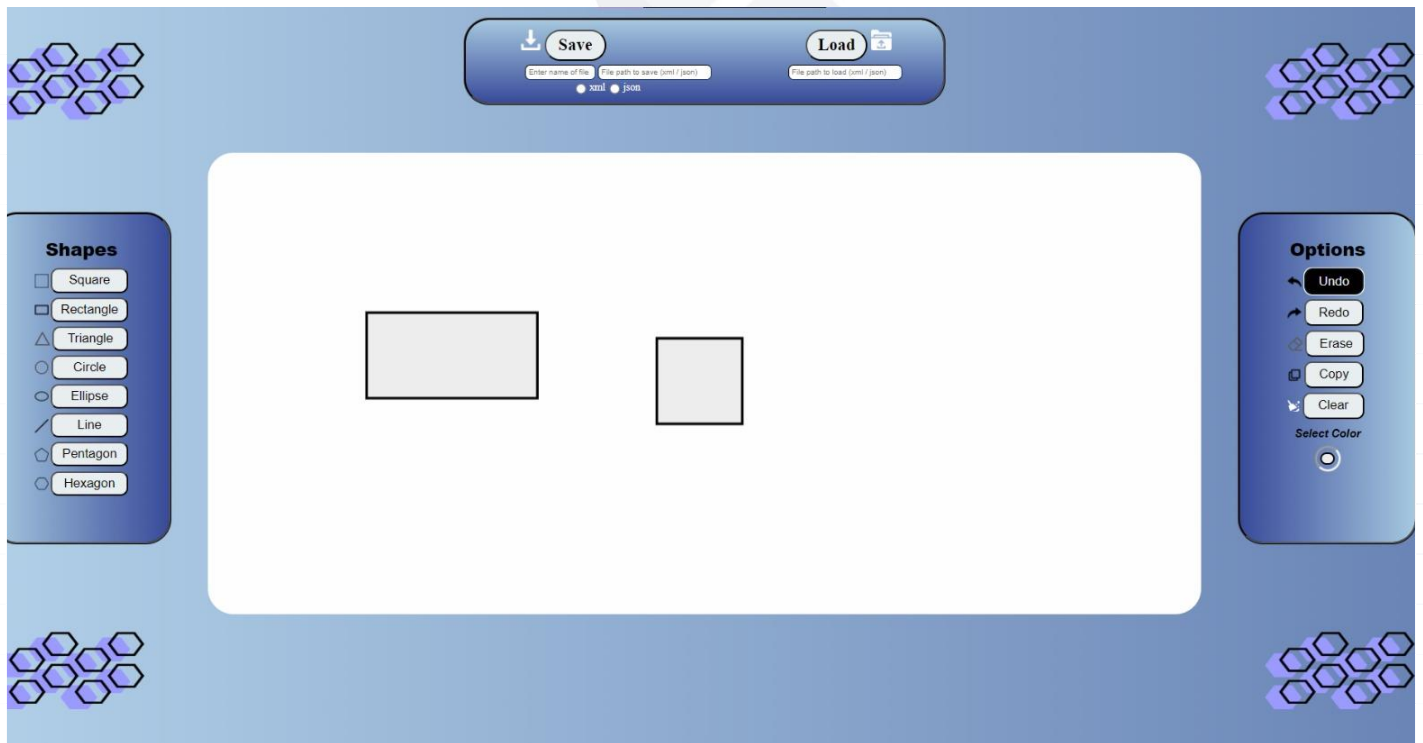
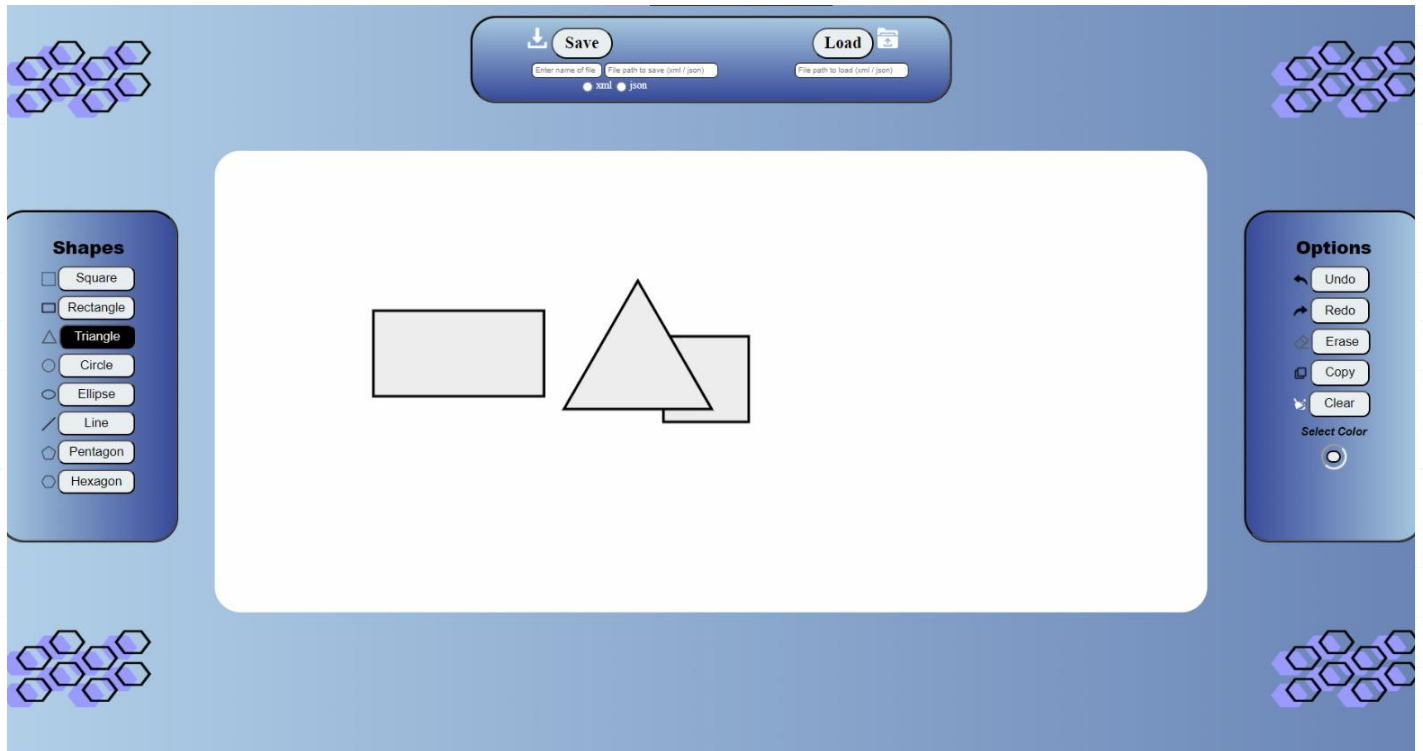
- **Recoloring shape** : Filling shapes using color picker by clicking on color picker and choose the color you want.



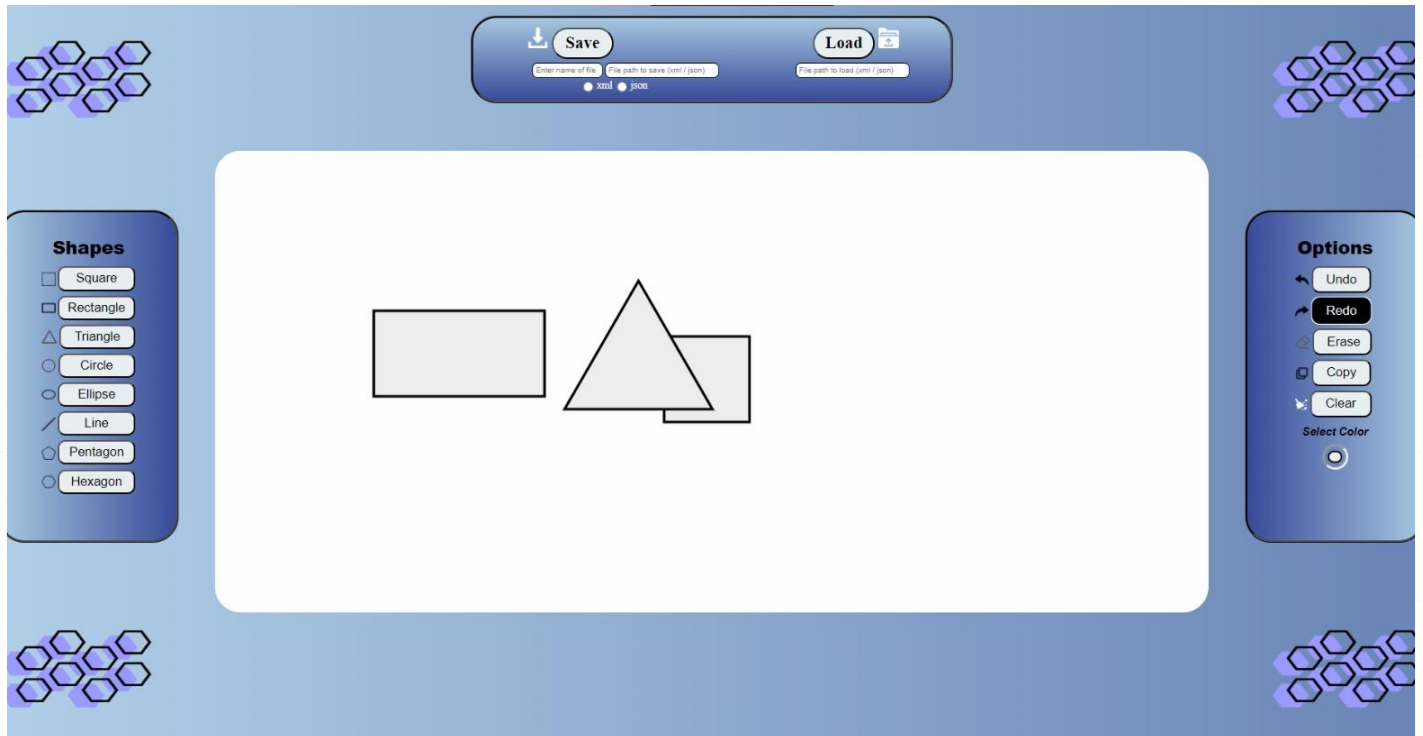
- Drawing shapes and coloring as you want :



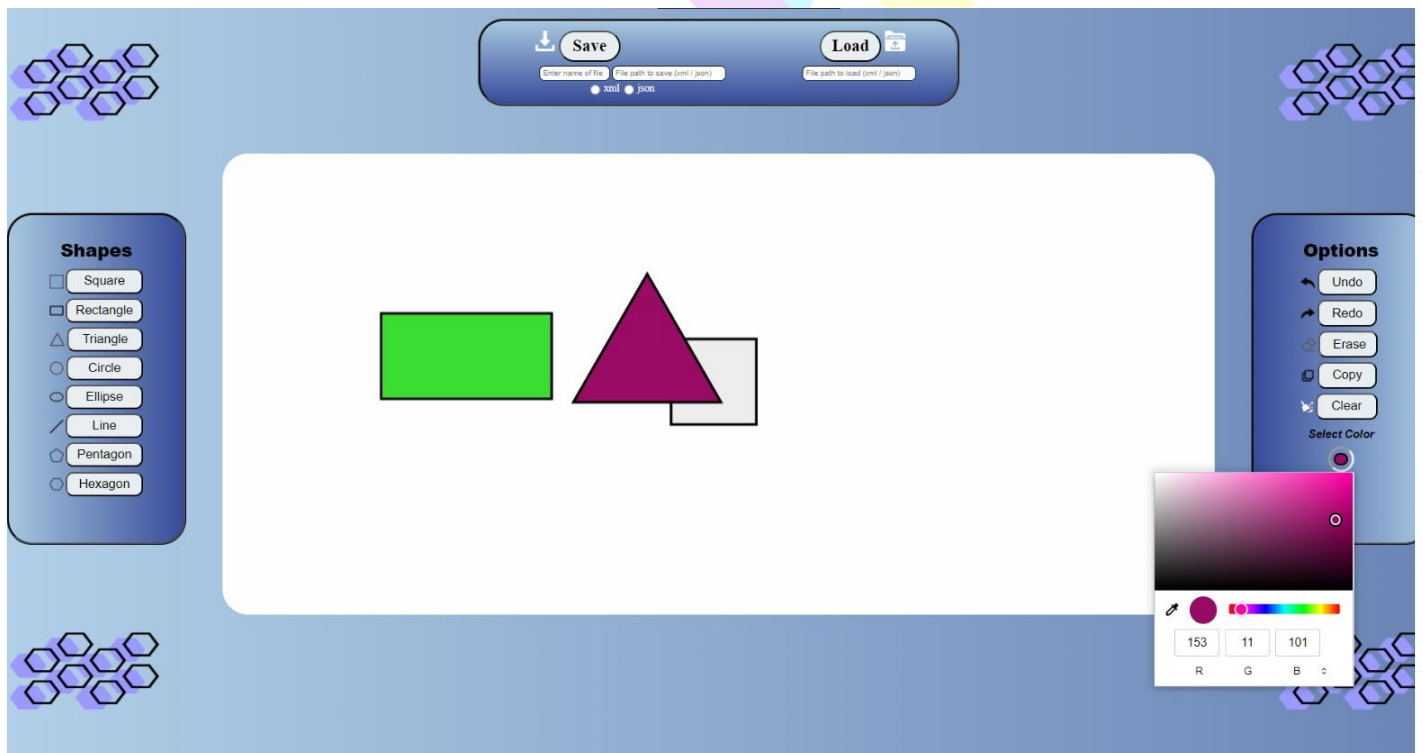
- **Undo** : last shape has be drawn is triangle when we push on undo it returns back

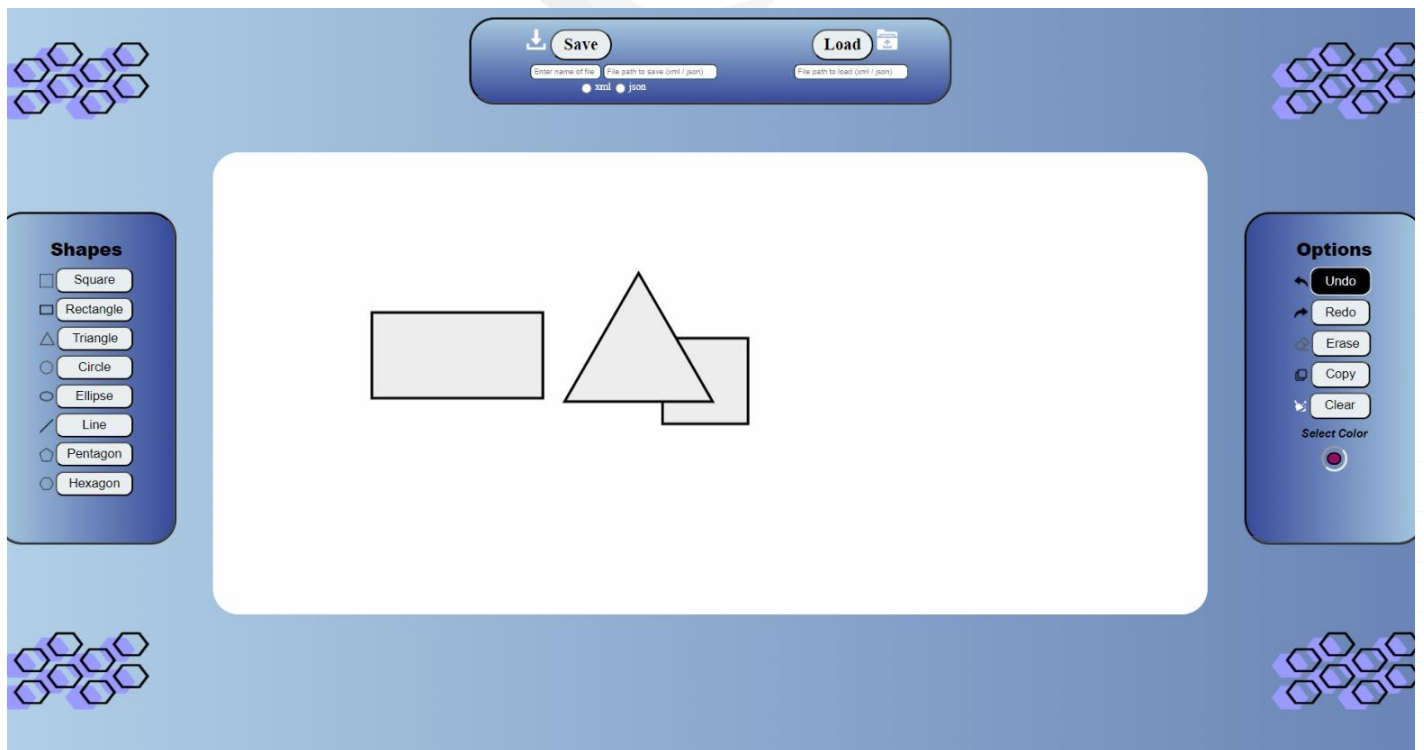
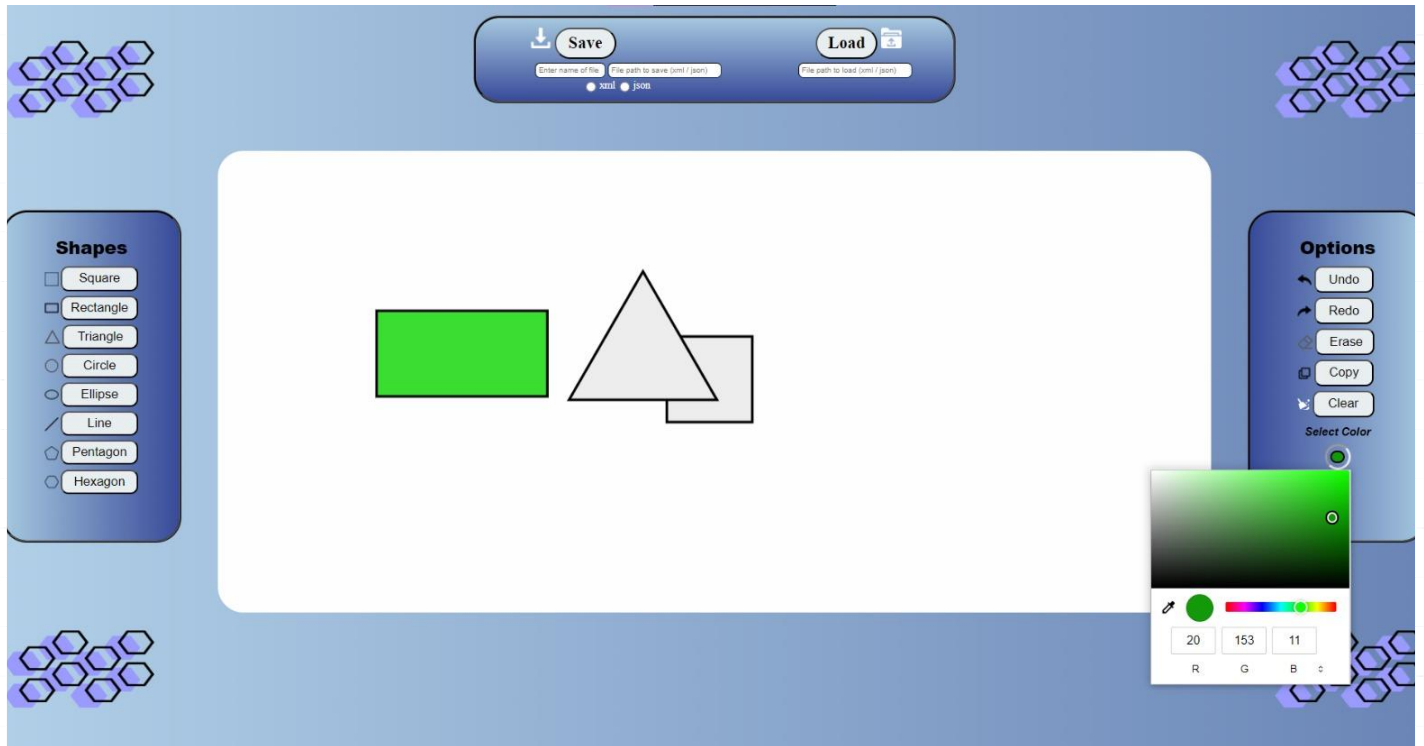


- **redo** : when we press redo the triangle is returned back to same place.

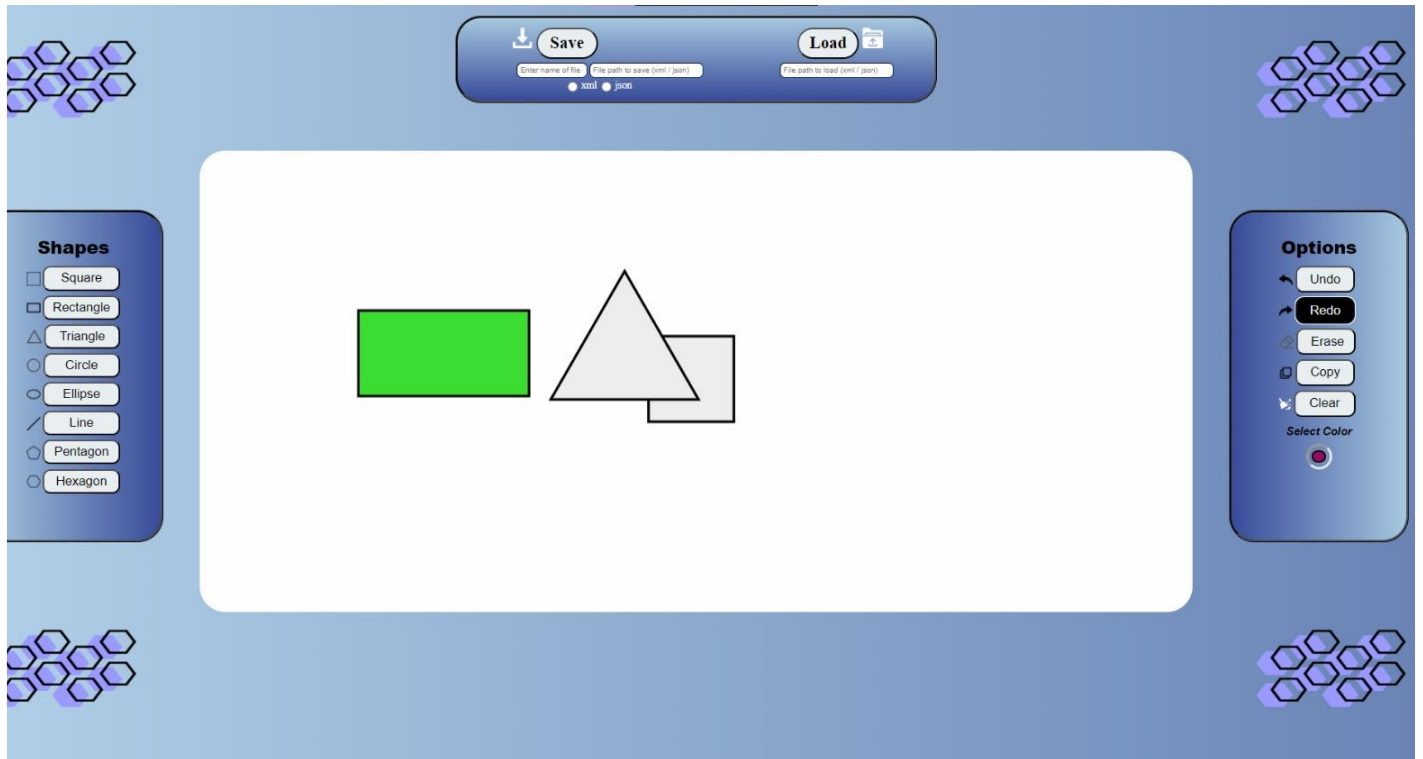


- **Undo and redo for coloring and resizing and moving shape :**

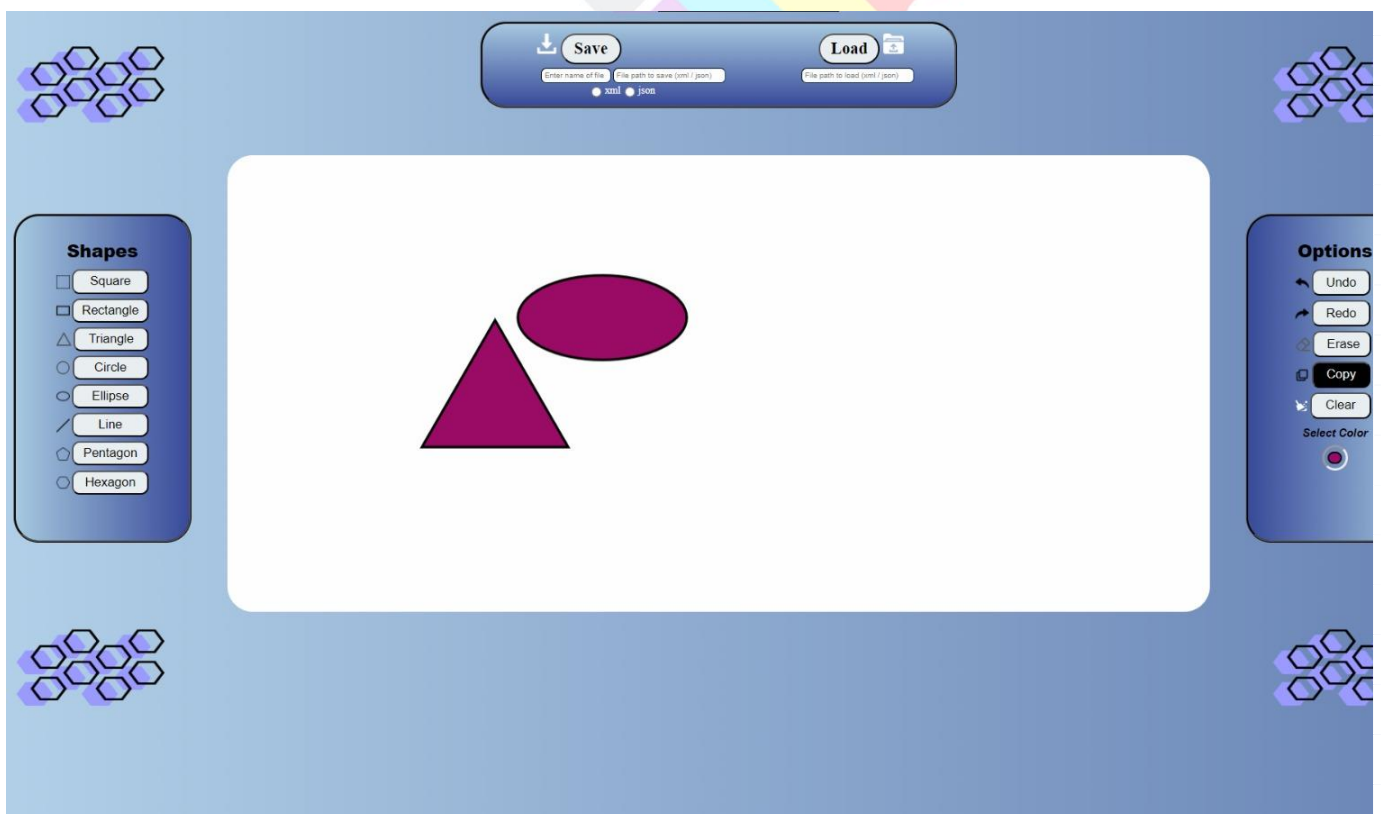


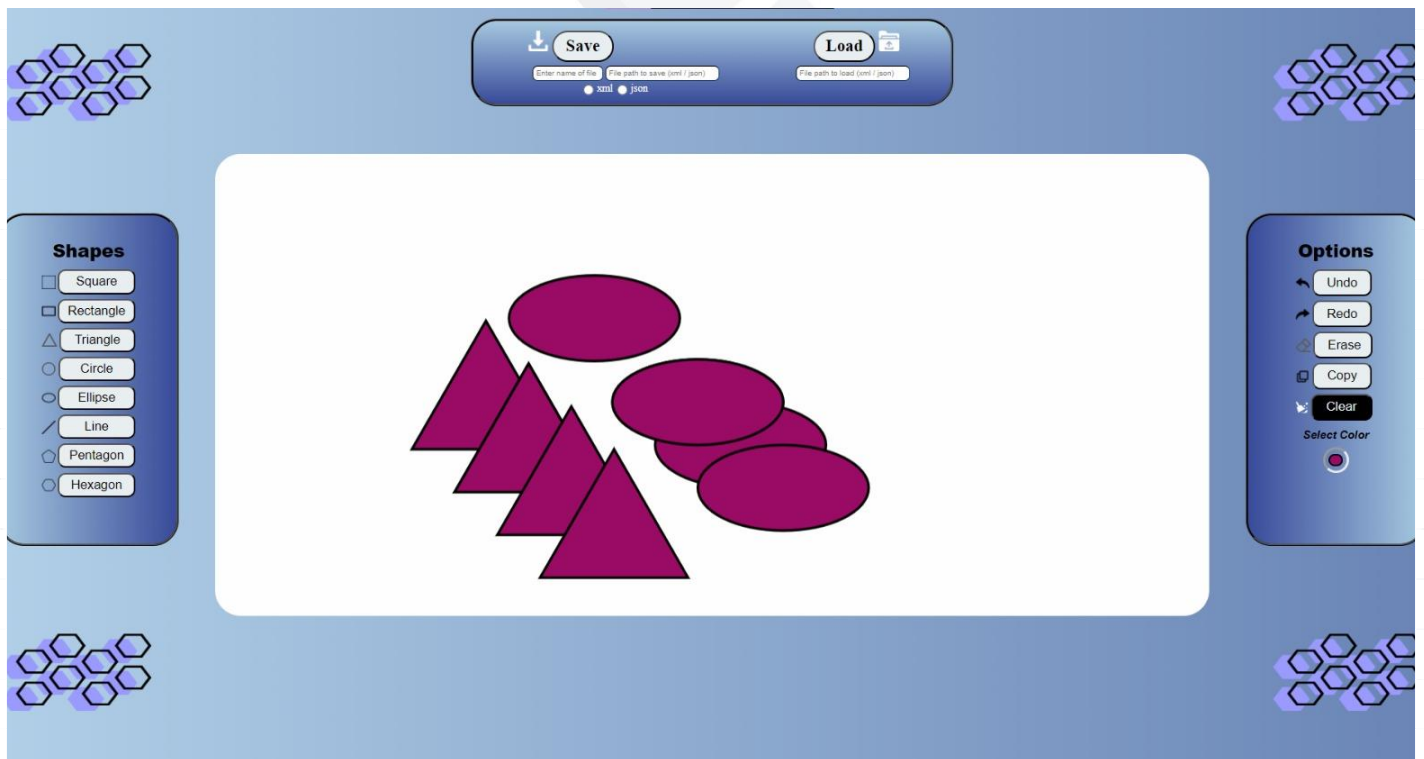
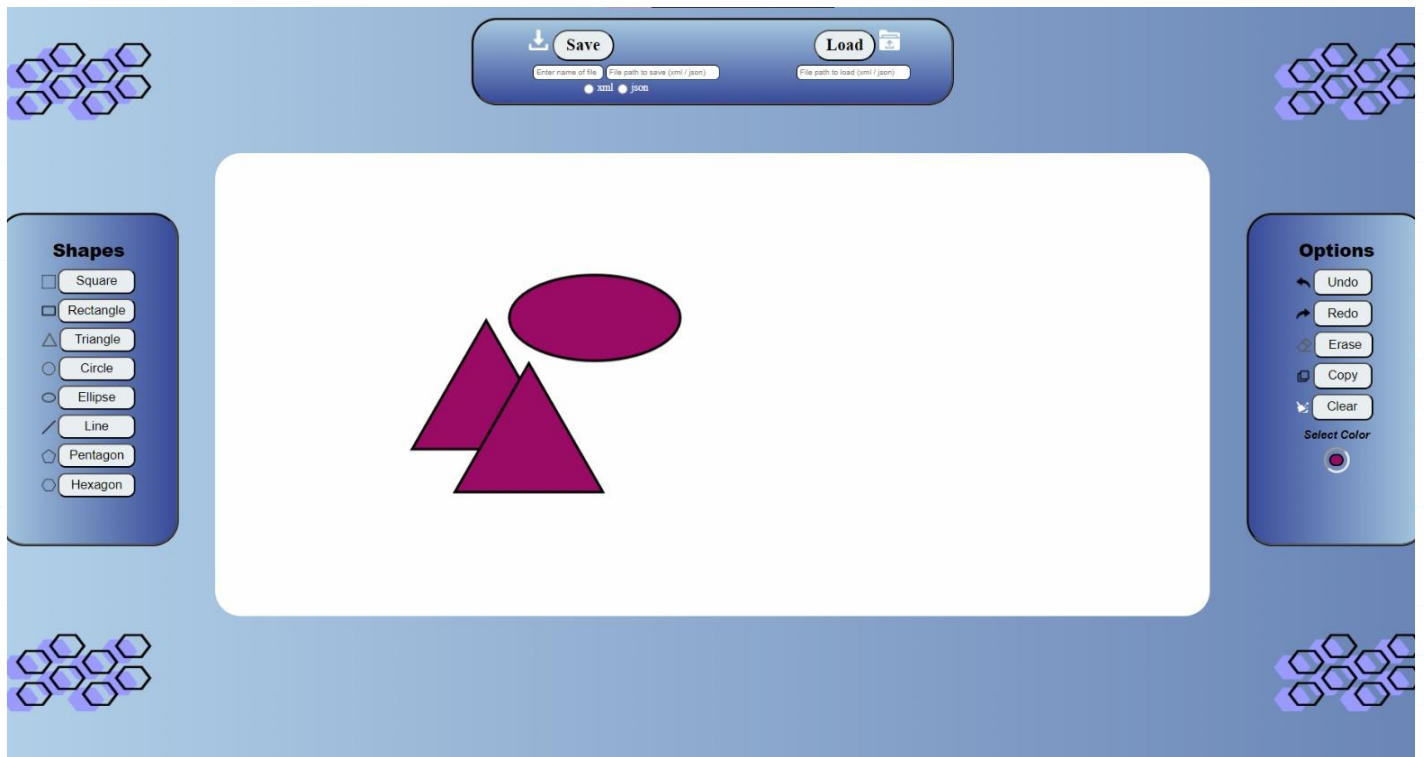






- **Copying shape** : To copy any shape, click on “Copy” button one click and click on the shape.



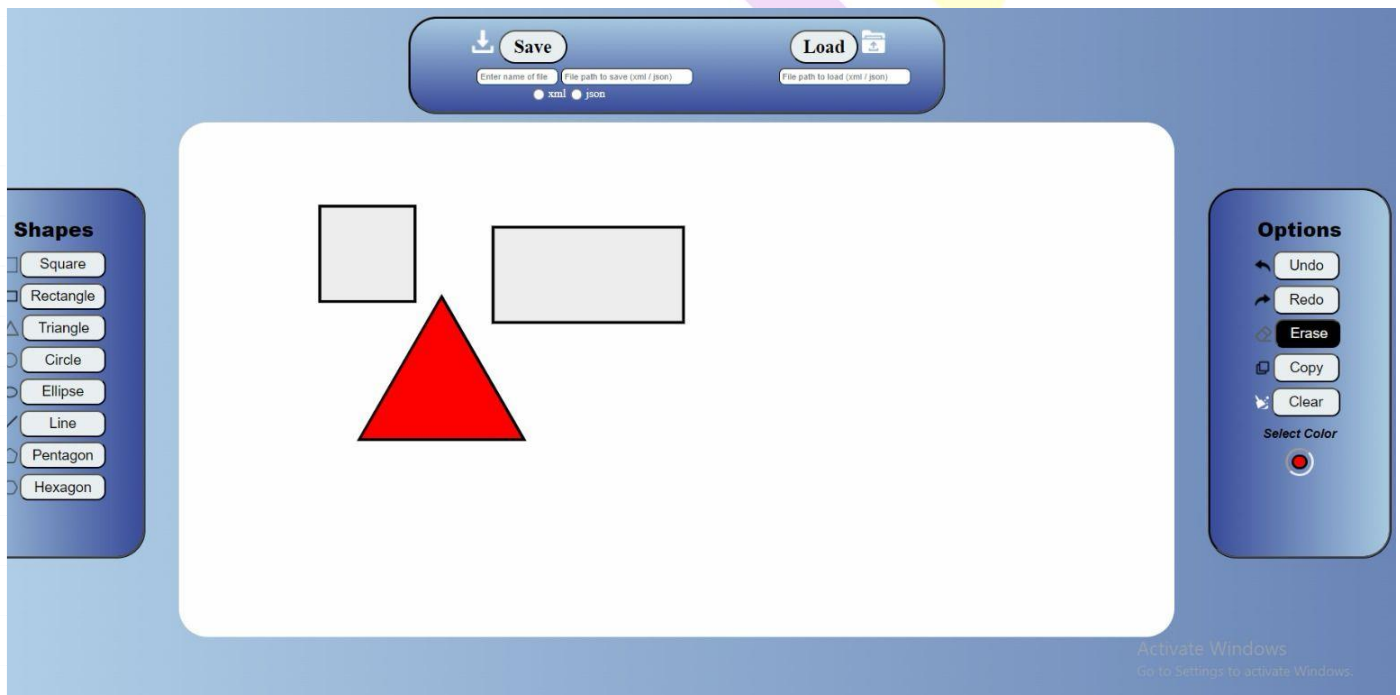


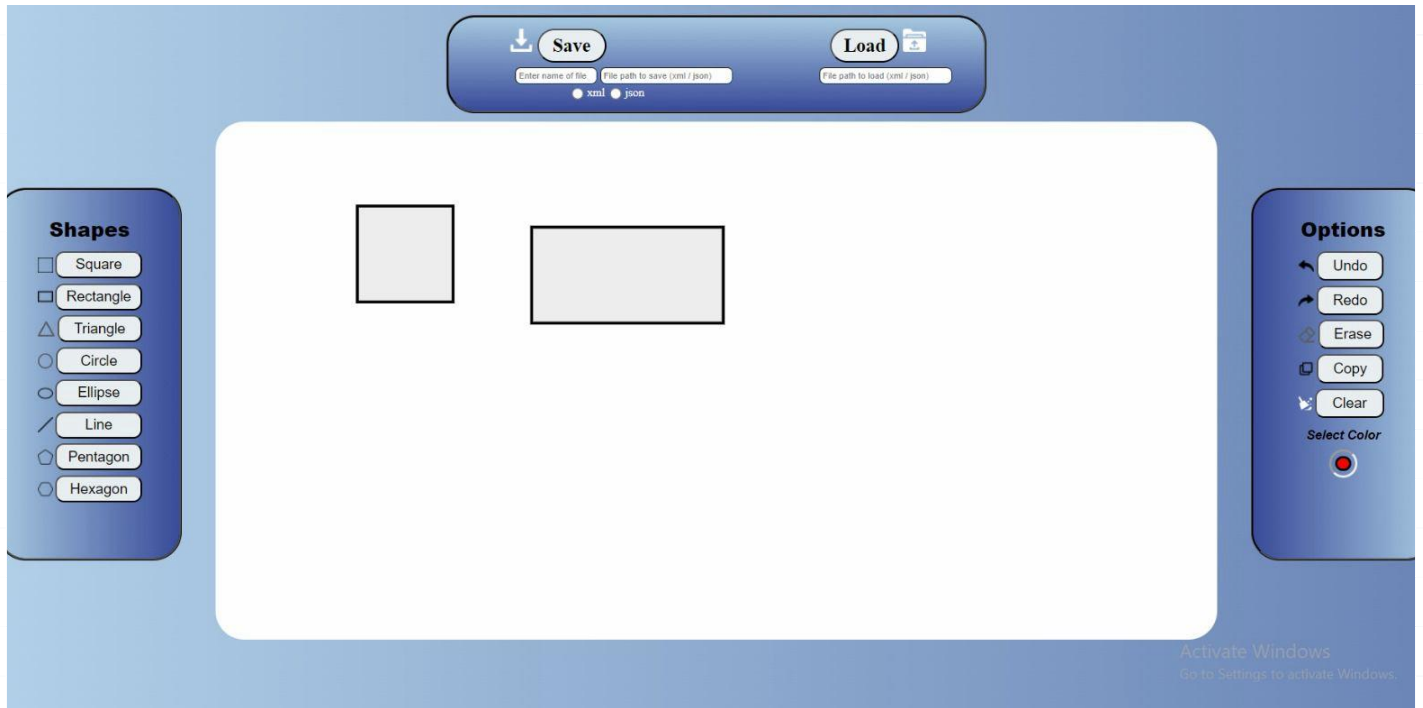


- **Clear all shapes** : press on clear

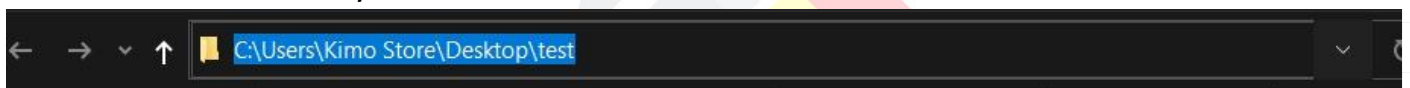


- **Erase shape** : To erase a shape, click on “Erase” button and click on the shape you want to erase.

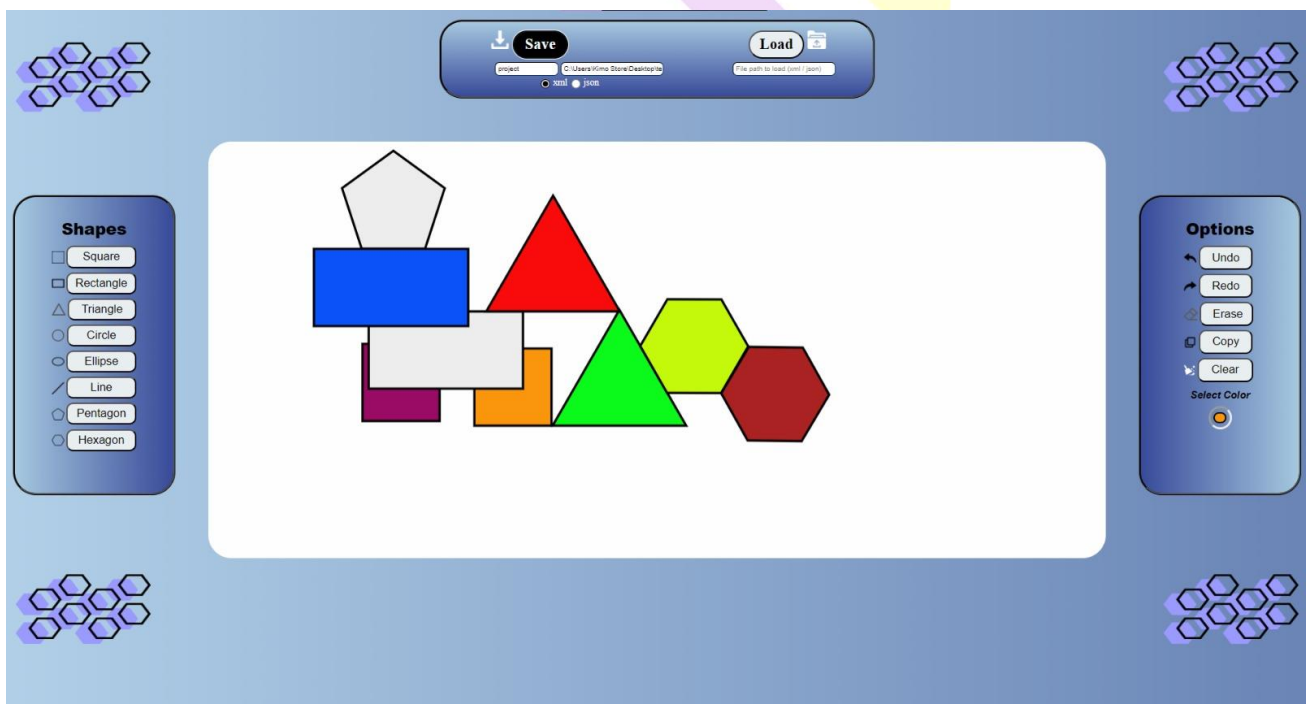


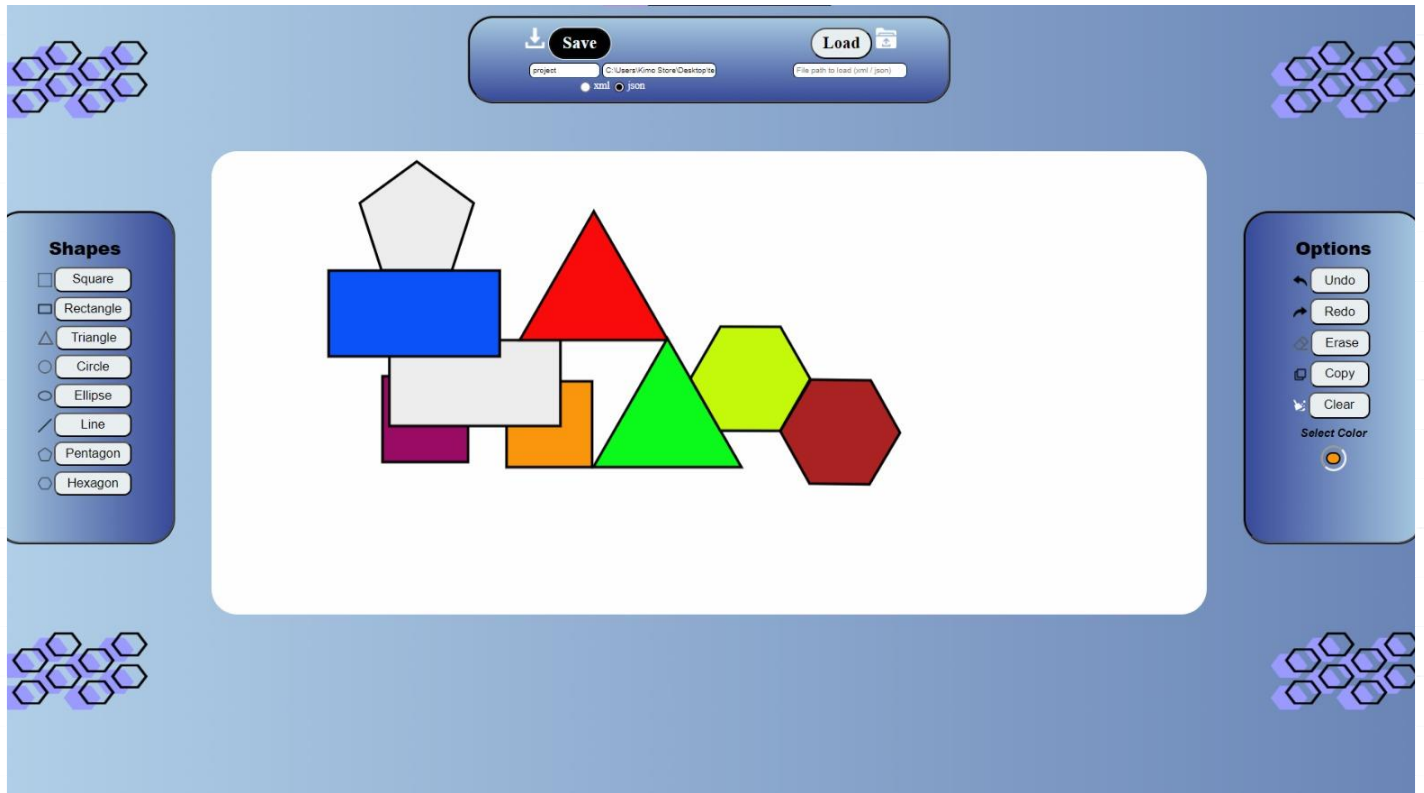


- **Saving** : Saving file and choosing the format you want (xml/json) giving the name of the file and the path you want to save your file in.
- Directory used to save :

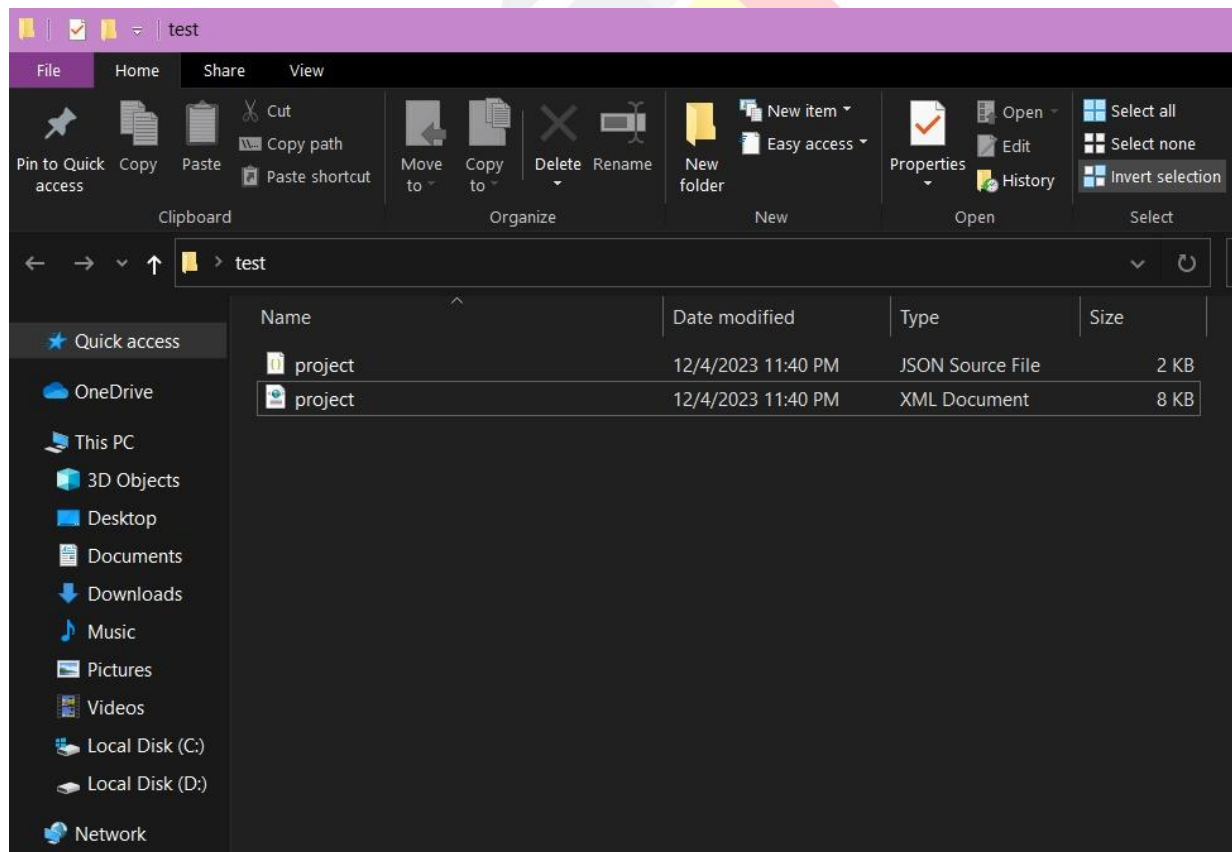


- Then choose the desired extension of file as follow :

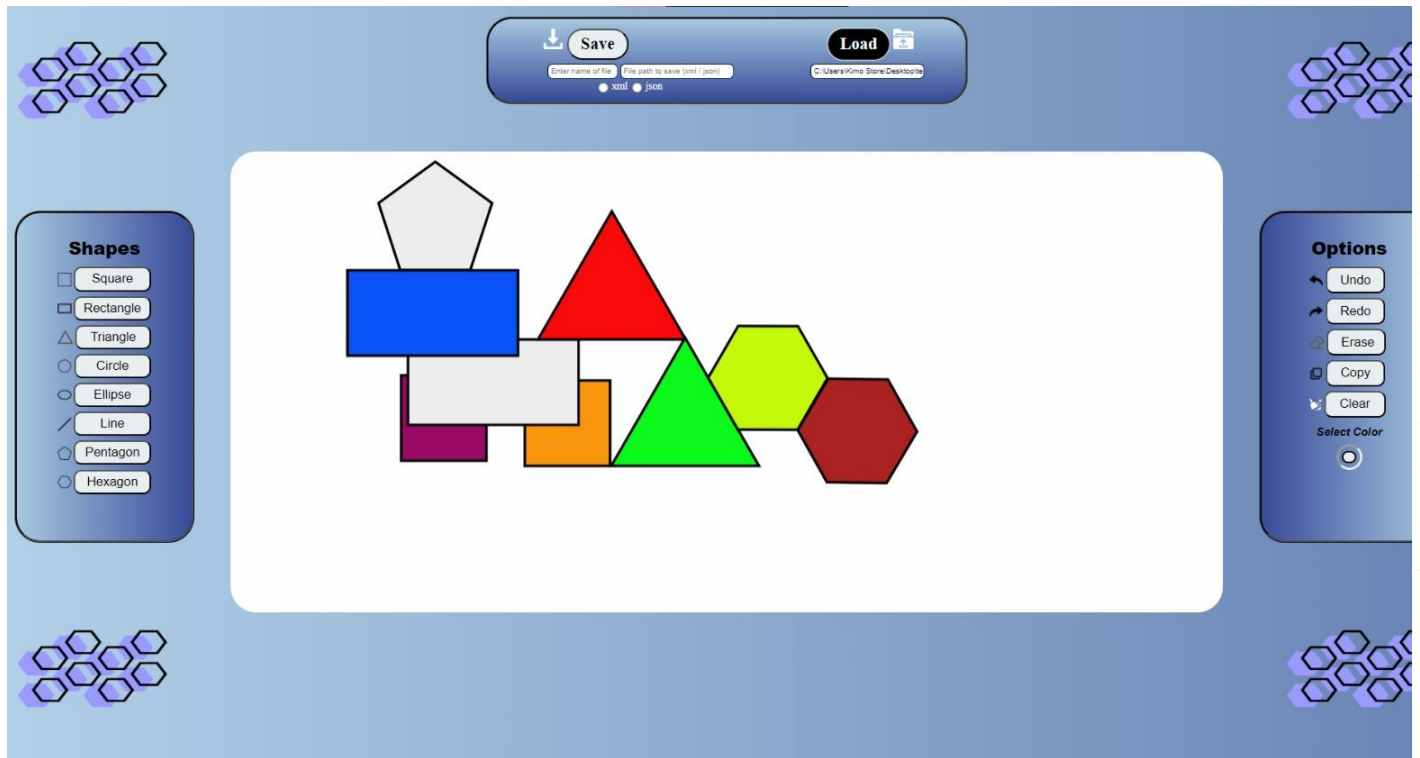




- The saved files are in the directory :



- **Loading** : Loading a file using the following format: "path\name.format"



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### **Video :**

- [https://drive.google.com/drive/folders/1E-I0tPLtDNHHSEjfkB7APiaUlnQpwOcd?usp=drive\\_link](https://drive.google.com/drive/folders/1E-I0tPLtDNHHSEjfkB7APiaUlnQpwOcd?usp=drive_link)
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