TEAMMATES NAMES

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Section 1 (Downloading & Running the program)

1.1 GitHub Repositories

- Link of GITHUB: Zerozone2/OOP_Paint_Lab: paint lab for oop (github.com)

1.2 Instruction to download codes

- **Downloading codes from GitHub repositories**

1. Open your Git Bash terminal.

2. Cloning Back-End files to your folder
3. Cloning Front-End files to your folder

1.3 Instruction to Run Back-End Server

- **Running Back-End codes**
  1. Open Back-End files to the IDE to be run.
  2. Use the normal Run button in your IDE.

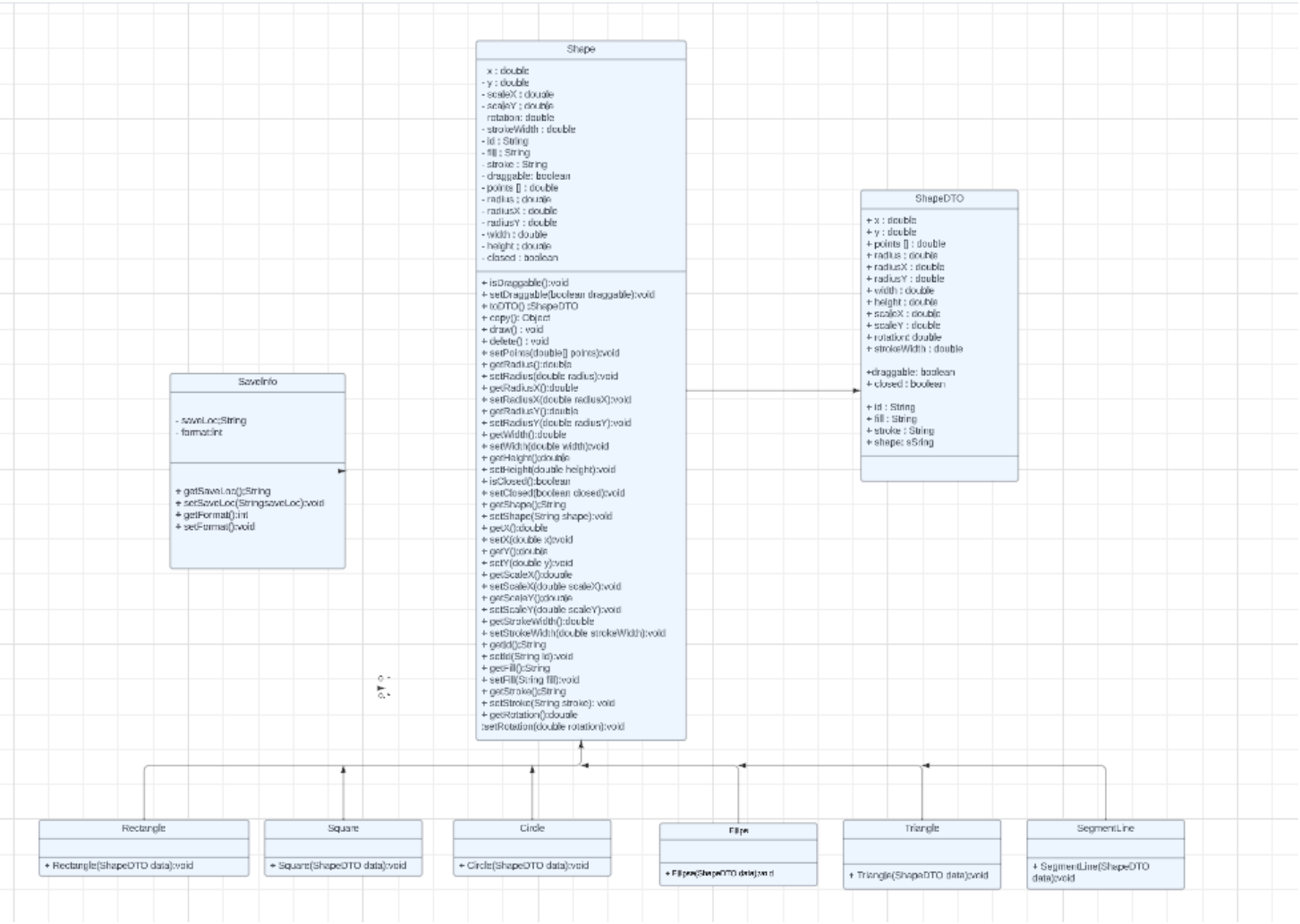
1.4 Instruction to Run Front-End Server

- **Running Front-End codes**
  1. Download and 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 IDE to run it.
  5. Running Vue server from command prompt or terminal by using “npm run serve”.

2.1 UML link

- **Class Diagram link: https://lucid.app/lucidchart/93092f4b-f916-49c3-bd15-e334b261369b/edit?invitationId=inv_c3a64711-b73b-4d38-8676-22c3071e8a56&page=HWEp-vi-RSFO#**

2.2 Class Diagram snippets



2.2 hierarchy

- **Controller**

  Receives all front-end requests.

- **Shape Factory**

  Creates all Shape Objects then pass DTO to them to set their attributes.
- **Shapes**

  Extend Shape abstract Class and Set their special and different attributes.
- **ShapeDTO (Data Transfer Object)**

  Has all the attributes needed in our application.

3.1 Factory Design Pattern

- **Shape Factory**

1. We implemented factory design pattern to create all allowable shapes according to their types.

3.2 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

3.3 DTO Pattern

is a design pattern used to transfer data between software application parts. The primary purpose of a DTO is to encapsulate data and send it between different parts of an application without exposing the underlying implementation details

4.1 Decisions

- Used Konva library for drawing.
- Implemented the main design patterns in back-end.
- Save files are generated and loaded in the backend.
- User can't enter negative radius or width or height

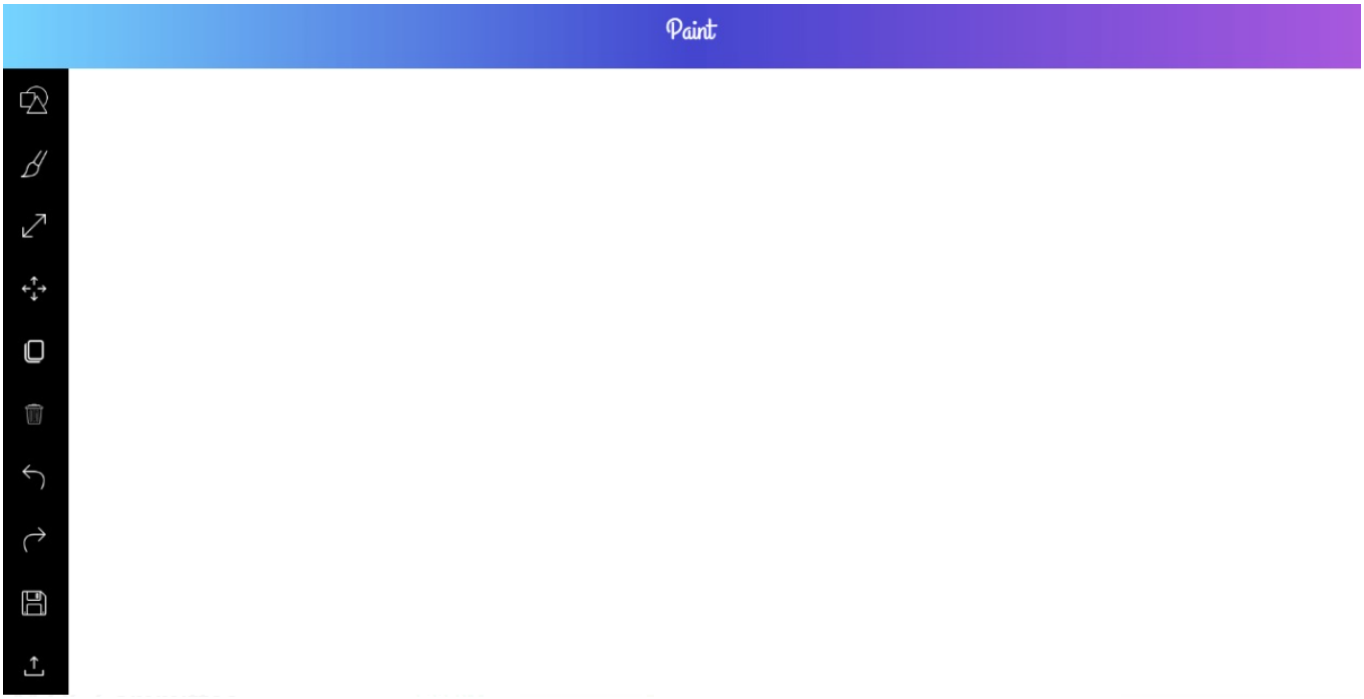
- User change the color of the last shape only he draws
- User enter a valid address location on his/her device in load/save feature

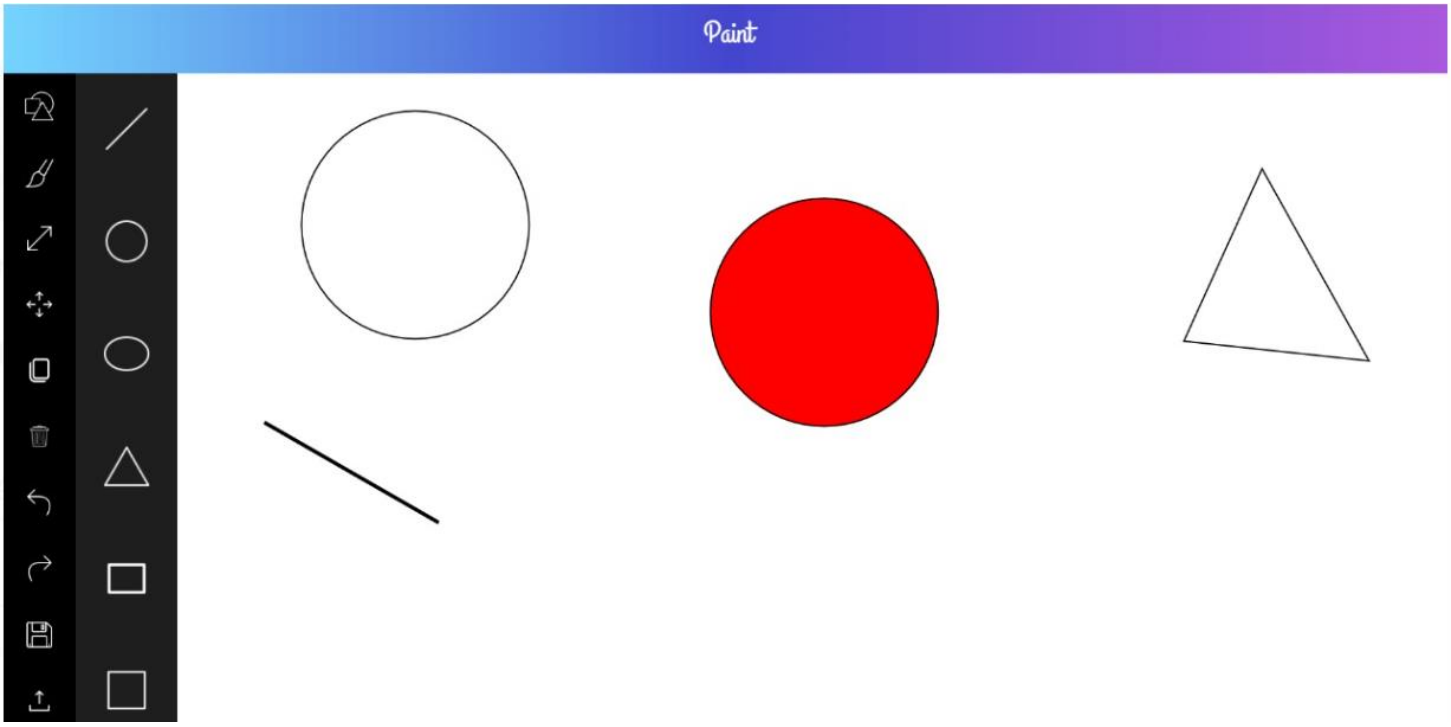
5.1 User Guide

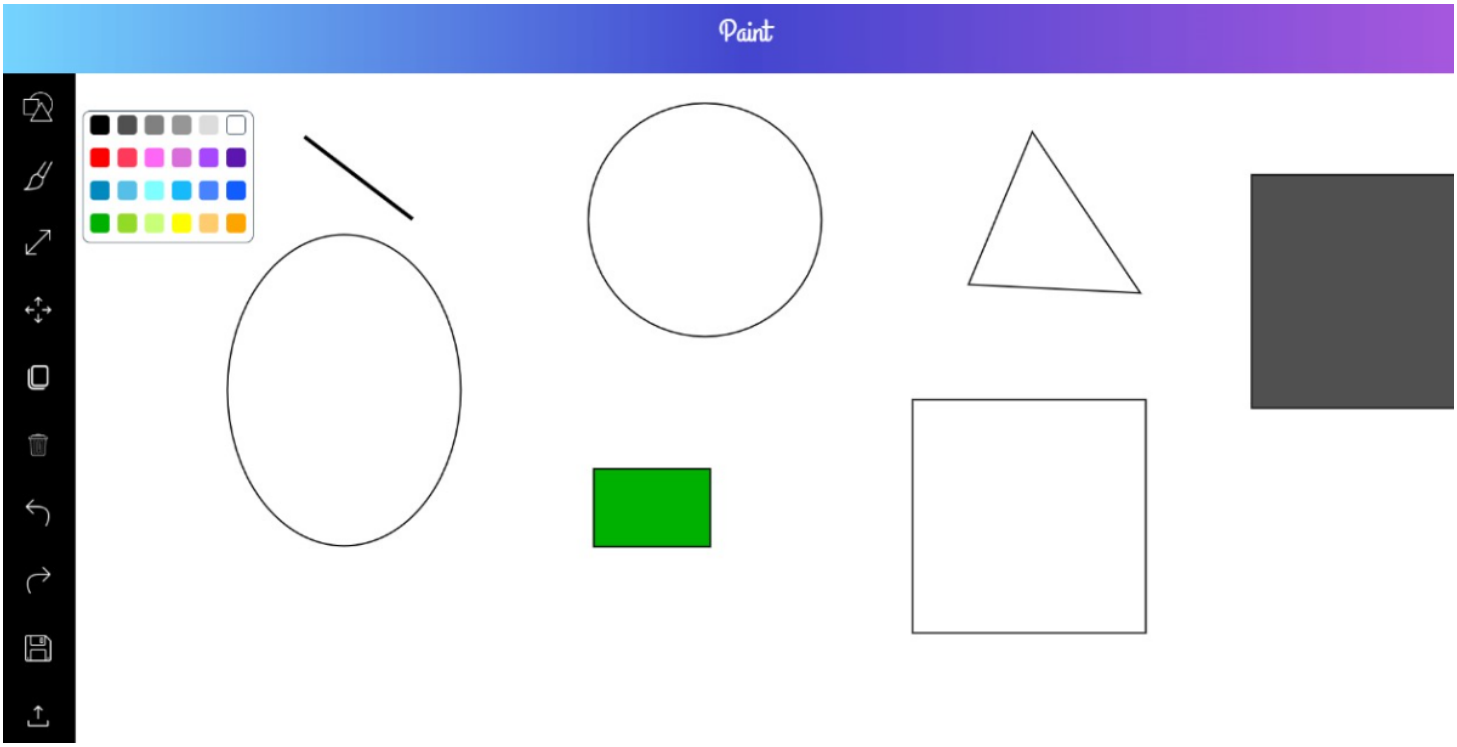
- I Recommend for you to have a look on 5-min demo video on this link

- https://drive.google.com/file/d/1uWK7M8vh6kFYqe6pdvsscillBsIDYC8N/view?usp=drivesdk

5.2 UI snippets




Paint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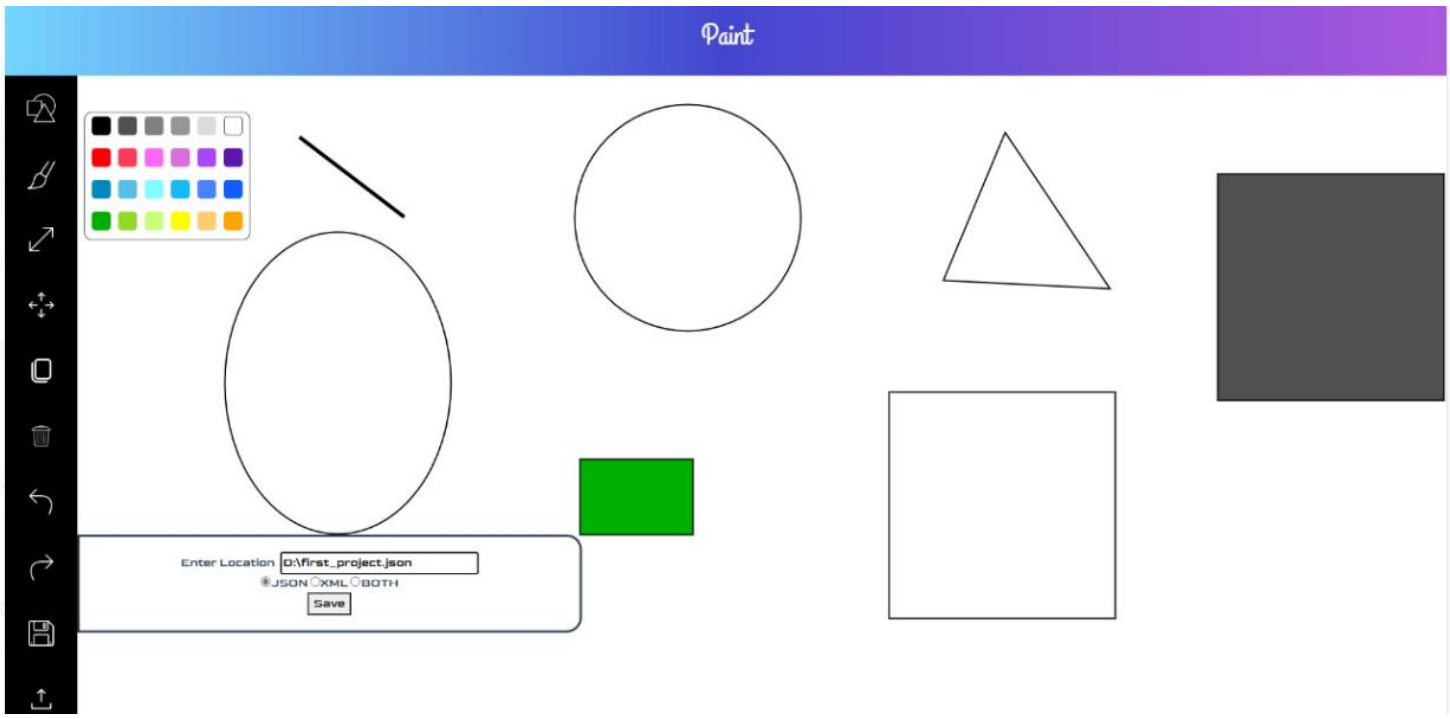
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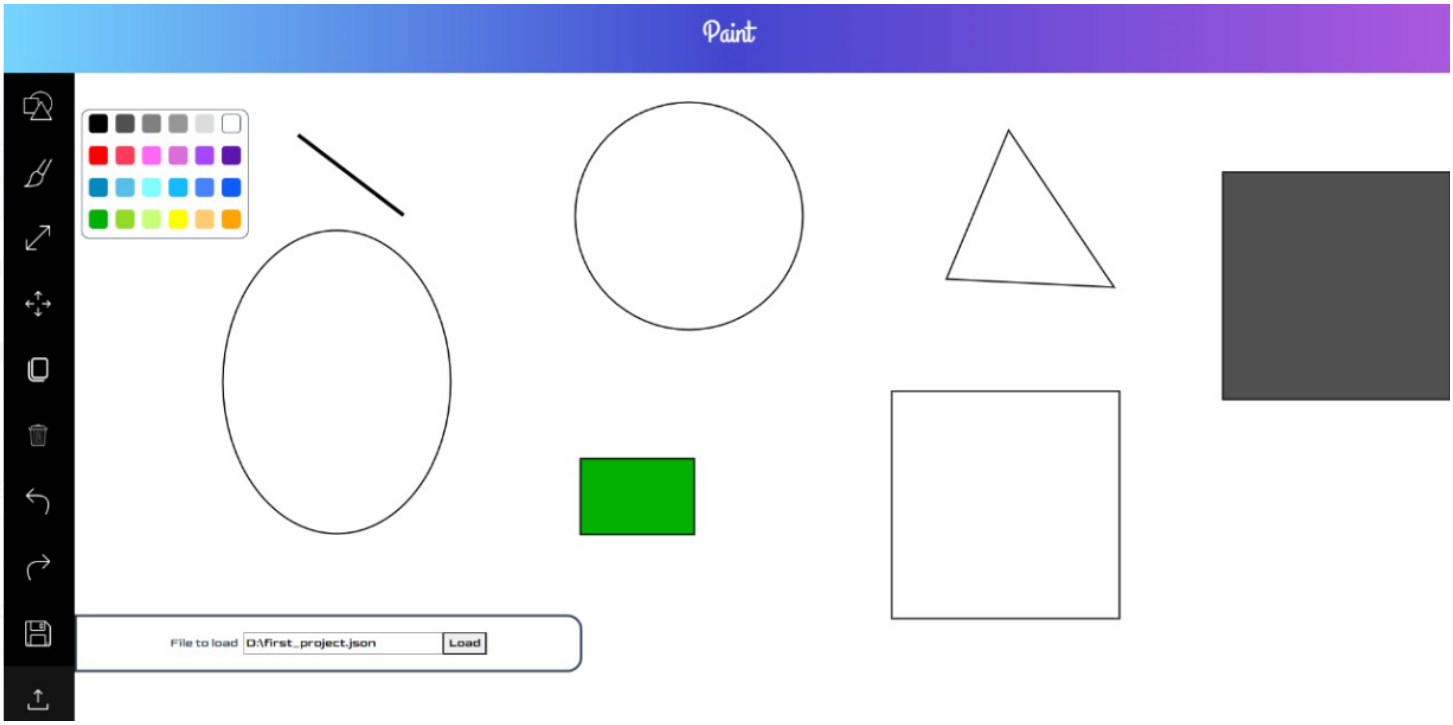
Enter Location D:\first_project.json
JSON XML BOTH
Save


Paint
File to load D:\first_project.json
Load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