



PAINT APP

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➤ Steps required to run code:

- ✓ Run the angular on ("http://localhost:4200")
- ✓ Run the Spring boot on ("http://localhost:8080")

➤ Design Patterns:

1. Factory Design Pattern:

We make a shape factory that receives a string representing the shape name and an id specifying the shape type and then create the specified shape.

2. Prototype Design Pattern:

We make the Drawable class(the class of all the shapes) extends the Cloneable Interface to make a prototype of the Drawable Class every time a shape is created.

➤ Design Decisions:

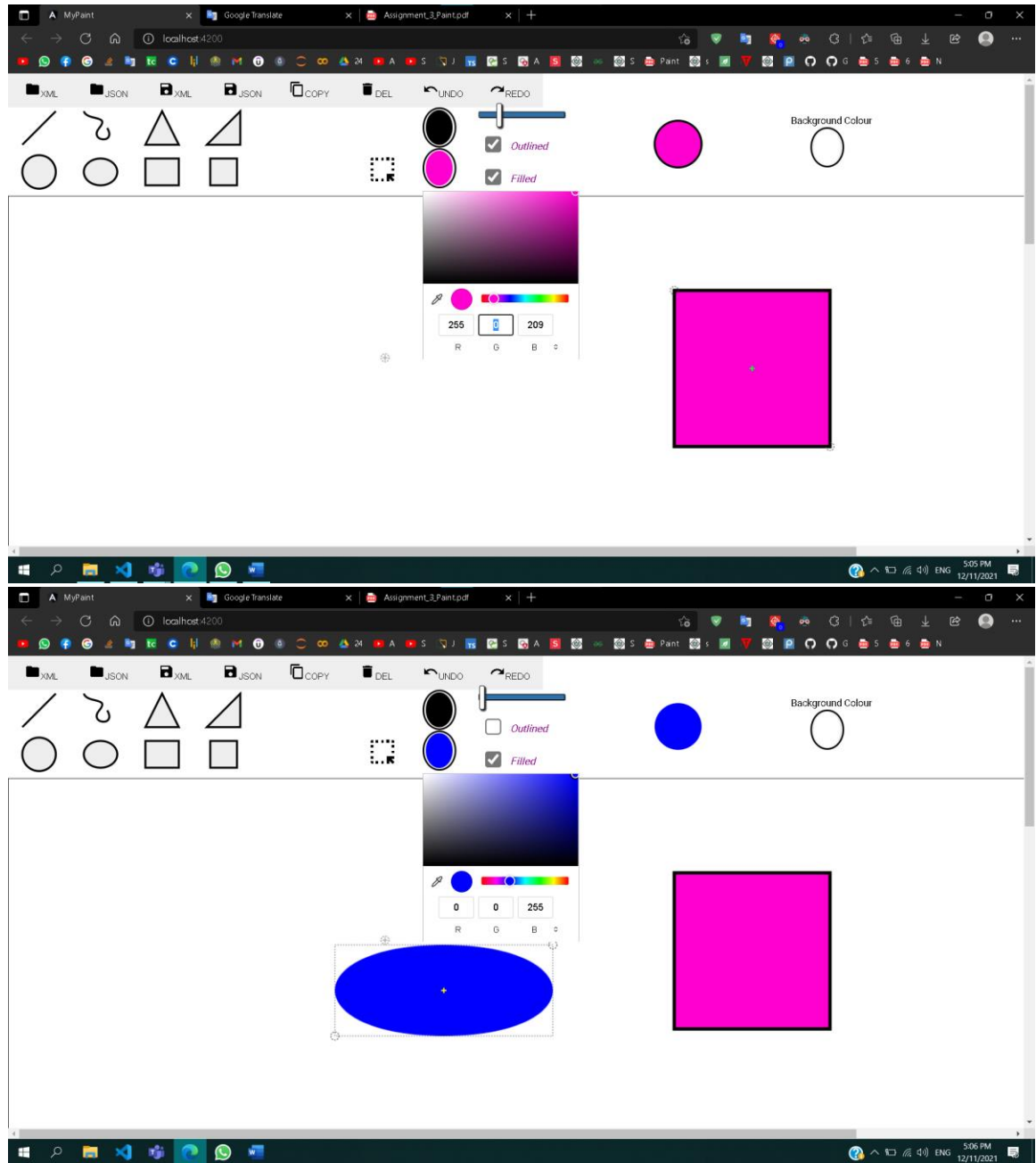
In the Backend: We could not use ObjectMapper class the same way used in factory when it came to loading .json extension files. So, we loaded the shapes manually.

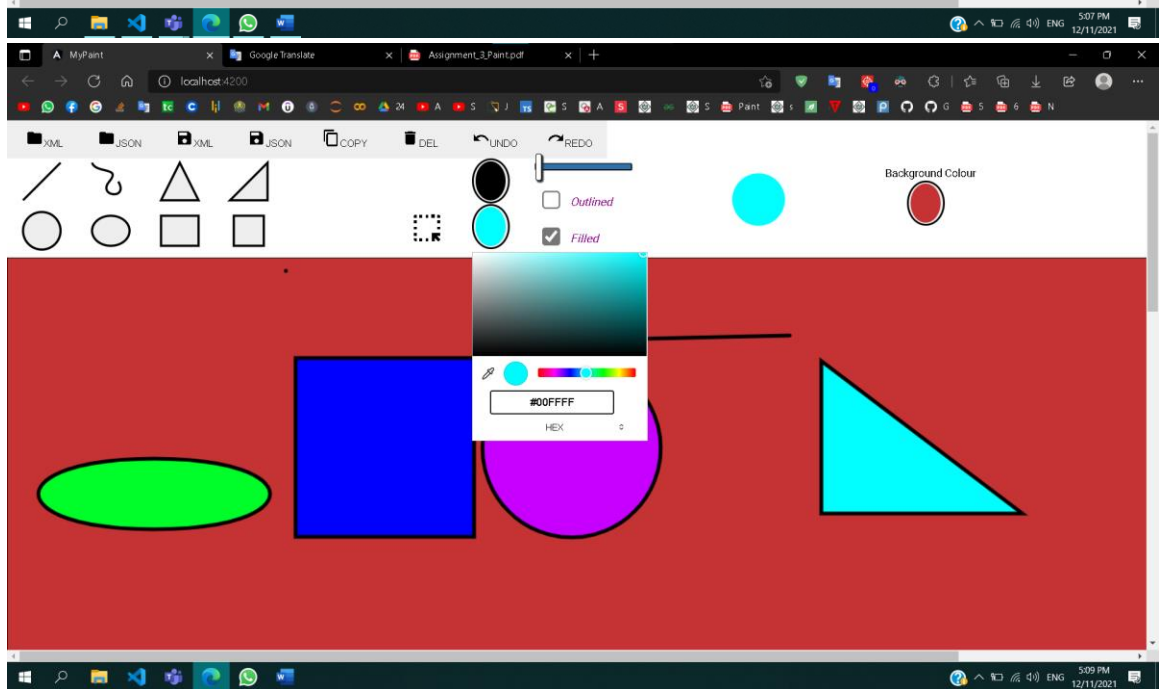
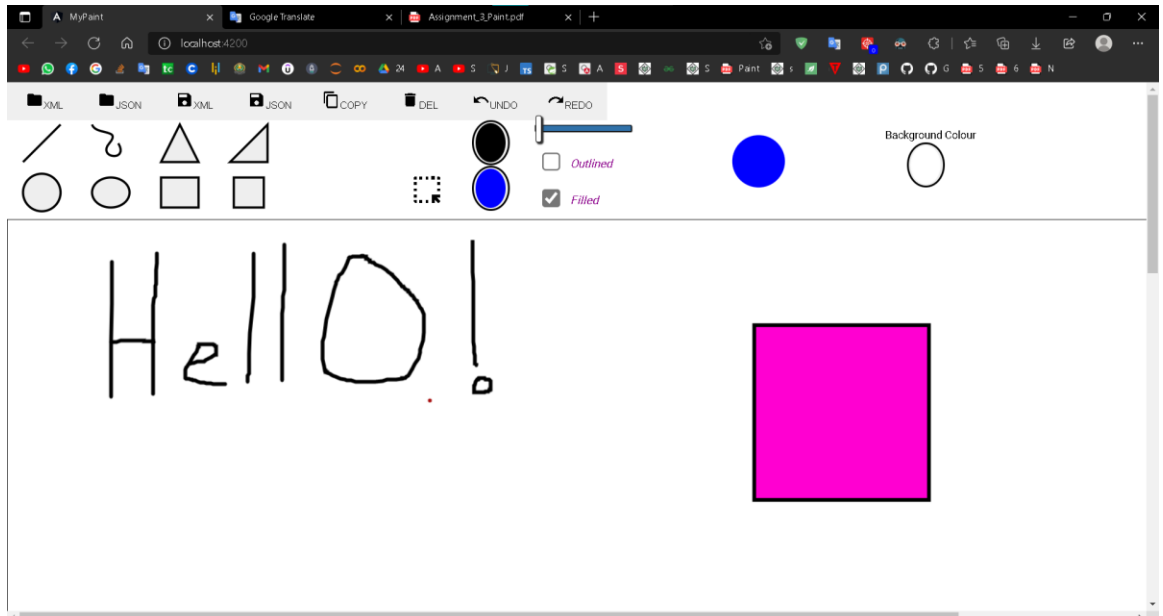
In ShapeFactory: we used ObjectMapper to create shapes when they are received from the frontend. ObjectMapper helped a lot saving a huge amount of effort and time.

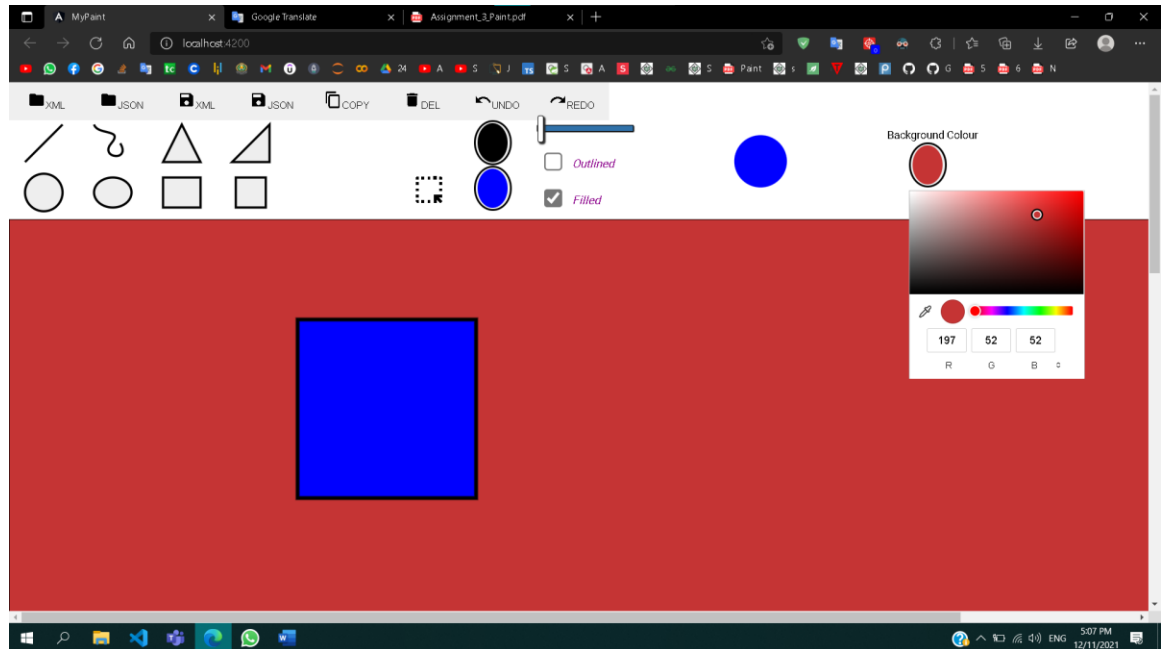
ShapeFactory does its job as clean as an ordinary factory design pattern would be expected to perform.

Prototype design pattern is implemented and works in Drawable.java

➤ Snapshots of UI:







➤ User guide:

create a line:



Click on the place of the starting point, drag to draw the line, and left the click on the end

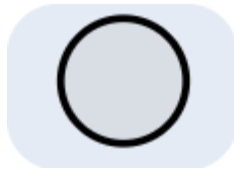
point. To create an isosceles triangle:



Click to identify the Triangle Head, drag towards the Base to identify the Height, drag left and right to identify the base length.

The same is for the right-angled triangle:





To create a Circle: Click to identify the Center, drag out to draw the Circle. The same is for the Ellipse:



. To create a Rectangle:



Click to

identify One corner, drag to the other corner. The same is

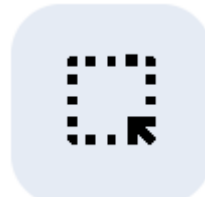


for the Square

. To make a free hand:



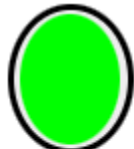
Click



to draw any thing. To select a shape _____ . To



change Border Size



The above is the color of the border, The second is the fill color of the shape.



Outlined

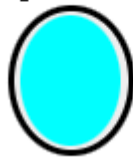


Filled

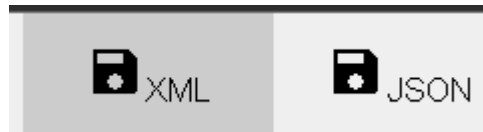
Outlined: if checked, the shape has a border.

Filled: if Checked, the shape has a filled color. Background

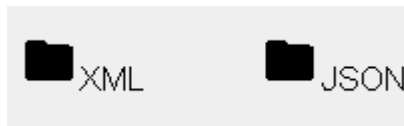
Background Colour



Colour:



Save the Paint:



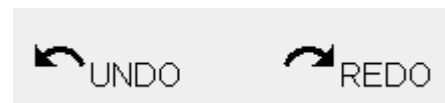
Load a paint:



Copy a shape:

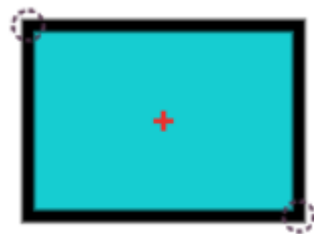


Delete a Shape:



Undo & Redo:

To move a shape: Click on the center and drag it to the new



place.