NAME: **ANMOL BHALOTIA**
STUDENT NUMBER: **200169419/1**
SUBJECT: **INTRODUCTION TO PROGRAMMING II**

FINAL PROJECT REPORT

List the modifications and extension that you have made to the template file (400 words).

- I have included the below-mentioned extensions to my drawing app

1. **Eraser Tool**

   This tool is used to erase anything that the user has drawn on the canvas. This allows them to fix any drawing that they have made on the canvas and allows them to rectify or make changes to the drawing.

   For this function to serve its purpose on the app, I have created an ellipse and set the fill to white whose x and y coordinates are set as mouseX and mouseY , so whenever the user clicks on the tool and uses it on the canvas, a white ellipse is drawn on the canvas, thus removing whatever is beneath the ellipse.

2. **Fill Tool**

   This tool is used to fill the background with whatever color the user chooses from the color palette. This allows them to work on their chosen background and create innovative designs.

   For this function to serve its purpose on the app, I have created an ellipse bigger than the size of the canvas which fills the whole canvas with an ellipse of the color chosen from the color palette.

   When the user has chosen their color from the color palette and clicks anywhere on the canvas, an ellipse appears over the canvas, hiding whatever that has been drawn on the canvas before. Thus, changing the background of the canvas.

3. **Pattern Tool**

   This tool is used to generate different colorful patterns wherever the user clicks on the canvas after choosing the tool from the toolbox.

For the function to serve its purpose on the app, I have created several ellipses, and rectangles whose x and y coordinates are the same as mouseX and mouseY , so whenever the user clicks on the tool and uses it on the canvas, random shapes and patterns appear on the canvas along with each pattern having random color and size combinations.

4. **Splash Tool**

This tool is used to generate different colorful ellipses on the canvas wherever the user clicks after choosing the tool from the toolbox.

For the function to serve its purpose on the app, I have created several ellipses, whose x and y coordinates are the same as mouseX and mouseY , so whenever the user clicks on the tool and uses it on the canvas, random ellipses appears on the canvas along with each pattern having random color and size combinations. This gives a splash-like feel on the canvas.

For these functions to integrate with the template, I have constructed separate sketch files acting as constructor functions and linked them with the index.html and the sketch.js file.

Describe how effective your plan was in completing your project (250 words).

At first, while programming the whole app, I had faced a lot of difficulties. I used to look back at the course videos a lot of times just to check how was the previous example done and how can I improve in making my program better.

I started off by dividing the tasks into bits and pieces and solving each of them in days and time slots. It made me think easier and stick to the schedule and as well as have a better understanding of time management. Eventually, I started exploring other drawing apps and getting some new ideas on how to integrate them with my app.

 I had brainstormed a lot of ideas, and tried to implement the same to my code but failed at some of them such as adding text feature to the app, adding customizable shapes, adding an undo button to the app, adding a snip and cut function which I failed to integrate with the app.

In the end, I chose to stick with the basic functions that I want the app to do and decided to work on the rest of the ideas after I have gained substantial knowledge on how to actually integrate it or at least figured out what mistakes I am making.

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Evaluate the process of completing the project and how effective the final product is. (250 words)

I loved the whole process of brainstorming and realising that I am building the same app that I used to scribble on my computer screen during childhood. It made me realise that yes, programming is tough at times to get some work done, but I don't regret anything because I tried my best to get things done. Even after the submission of this project, I will be working on this app to make it even better and add more extensions and try to make it similar to the paint app that I have been using since childhood.

I had tested the app on my friends, relatives, colleagues, and to be honest, they were surprised that I have built this app. Each one of them had given me different feedback, such as they needed a brush function, some needed more colors, some needed shapes to be added to the app, some wanted different stamp styles, different app design, etc.

Every user had a different version of the app in mind and certain expectations with the app and happy to work on each one of them in the future and increase my skills with time to meet those expectations.

List any external sources that you have actively utilised in your project.

I have used the below mentioned sites for this project

1. https://p5js.org/reference/
2. https://www.w3schools.com/