# **Final Project Project Plan**

# **Submitted to:** Mr. Fulk

# **Project Manager:** Mr. Fulk

**Date:** 4/29/22

**Project Overview:**

The purpose of Water Color Sort is to allow users to exercise their brain while also relieving stress through sorting colored water in test tubes! The objective of this game is to beat all 12 levels — each having tubes with random colors inside — by sorting the colors in the tubes accordingly so that each tube is only filled with one color. A test tube can only be poured into another if the top colors of both tubes are the same and if the selected tube is not at maximum capacity. In addition, some levels are special “mystery levels” in which players are only shown the top color of each test tube. A user will automatically advance to the next level once the current level is completed, and will be able to click the “restart” button to restart the level at any point during the game.

**Project Team:** Susanna Tang, Kayla Chen, Ashley Chen

Susanna has the code and she shares it to us every time we work on the code. She is responsible for running the code while Kayla and Ashley are responsible for updating the testing log. All of us are responsible for the methods we assign to each other.

**Challenges:**

The animation of the water pour & the filling of the tube will be challenging as we have little experience with animation in Java. Additionally, the overall GUI may be an obstacle because we have great ambitions toward making a visually appealing app. We brainstormed this idea with add-ons in mind, but that may be challenging because the animation and the GUI are hard in itself and we may run out of time to make our project more unique. Still, we remain positive because this game is really entertaining to us.

**Major Tasks and Schedule:**

We will write an overall pseudocode before we start on VS Code. The pseudocode will outline all classes and provide descriptions for all classes, methods, and fields. After coding the basic game, we will add the graphics and animation. If we have time, we will add more features — such as confetti as a reward for completing each level — and sounds. We will establish a timeline of tasks with specific goals to meet by the end of each week, create a Google sheet to report our daily bugs, and submit a status report every week.We worked on this project over spring break, and worked together for 90 minutes (on Zoom) each day. We thought this was a good plan because we would be much busier once school started.

| Task | When | Responsible |
| --- | --- | --- |
| Play and Observe the game (all aspects of each level) | ongoing | All |
| Pseudocode (all classes, methods, and fields outline and descriptions) | 4/17 | All |
| Coding the logistics | 4/17 - 4/30 | All |
| Tube Class | 4/19 | Each person writes 4 methods (total 12) |
| TubeShape Class | 4/19 | All (team effort/struggle) |
| GUI - test tube shape and colors  5, 7, and 9 test tube layouts (TubeShape class and Level Class) | 4/18 | Susanna: 5  Ashley: 7  Kayla: 9 |
| AllLevel Class | 4/20 | Each person writes 4 different levels (4 methods) |
| Level Class | 4/21 | Each person writes 2 methods |
| Class Diagram Template | 4/20 | Each person writes the information for 2 classes |
| Write main class - play method mouse activity (mouseclick, etc). | 4/20 - 4/29 | Each person does 3 methods |
| Main Class GUI | 4/17-4/25 | All |
| Main Class Animation (raising tube and unraising tube) | 4/23 | Susanna |
| Main Class pouring animation (raising, shaking pouring) | 5/2-5/5 | Delegate later |
| Research GUI | ongoing | All |
| GUI (next level buttons and text, level titles) | 4/27 | Susanna: Congrats button  Kayla: Text for next button  Ashley: border outline for next button |
| move on to next level when level is complete (drawfinishedpage method) | 4/27 | Susanna |
| compile status report #1 | 4/29 | All (each person add accomplishments) |
| add mystery levels | 5/2 | Susanna: help debug etc  Ashley: change top color from white to normal color  Kayla: help debug etc |
| reset level button | 5/4 | Delegate later (next week) |
| Preliminary specification | 5/5 | all |
| Status report #2 | 5/5 | all |
| Status report #3 | 5/12 | all |
| Status report #4 | 5/18 | all |
| Research animation | ongoing | All |
| Add-ins (if there is time, timed levels) |  | All |
| Testing and Debugging | ongoing throughout whole project, keep a separate log for it | All |
| Make presentation slides | 5/18 - 5/19 | All |
| Coordinate presentation elements | 5/19 |  |