CPSC 6119 Semester Project Proposal

a. Project Title: Love Island Game Show Simulator

b. Team Members:

- Alexis Davidson
- Tiara Gibson
- Khushi Jani

c. Description:

The project will be a simulation of a reality game show, inspired by "Love Island," where players (islanders) interact with each other and compete in challenges. The game will simulate different relationships, challenges, and player behaviors.

It will include the following components:

- A **data store** to track islanders' scores, relationships, and history.
- A **user interface** that allows users to view the current standings of the islanders and interact with the game by introducing new challenges or events.
- Functionality in the app will allow the islanders' actions and scores to be dynamically changed based on user interaction and events in the game.

d. Expected Pattern Implementations:

1. Singleton Pattern - To create a single game state or tracker that maintains the islanders' scores and interactions, ensuring only one instance of the game state exists.
2. Observer Pattern - Notify the game tracker whenever an islander's score or behavior changes, allowing for dynamic updates across the UI and game state.
3. Command Pattern - For creating challenges or events within the game, where each challenge is treated as a command that can be invoked, undone, or modified.
4. Strategy Pattern - Handle different behavioral strategies that islanders can adopt during challenges (e.g., competitive vs. cooperative behavior).
5. Decorator Pattern – Allows for the dynamic add/removal of different islander features (i.e. leader, romantic)

e. Language Choice:

Commented [AD1]: do we have to include the database here, like SQList or something for the datastore?

- Language: Java
- Frameworks/Libraries: JavaFX (for the UI), SQLite (for the data store)

f. Functional Elements per Team Member:

Team Member 1: Alexis Davidson

- Implement the Game Tracker (Singleton) to monitor scores and to log updates.

- Develop the GUI, including the islander selection and challenge execution.
- Manage the observer pattern to ensure that islanders notify the tracker of score changes.

Team Member 2: Tiara Gibson

- Implement the Command pattern to handle different challenges that are executed.
- Design and development of the Strategy pattern to control islander behaviors during challenges.
- Manage the data store integration to track and save islander scores.

Team Member 3: Khushi Jani

- Implement the decorator pattern to add or remove features (i.e. leader, romantic) from islanders dynamically.
- Create additional challenges using the Command pattern.
- Implement a reporting screen to display final scores and challenge logs.