### Project 1: Flower Adventure

**Description:**

2D browser game that uses PNGs for elements

**User Stories**

**Movement and Controls**

As a user, I want to use the WASD keys to move my character around the game world so that I can navigate and explore the environment.

**Item Collection**

As a user, I want to collect flowers by touching them so that I can increase my score.

**Health and Damage**

As a user, I want to lose a heart if my character touches a thorn so that the game presents a challenge.

**Winning and Losing**

As a user, I want to see a lives tally (hearts) on the screen so that I can keep track of my remaining lives.

As a user, I want to restart the game if I lose all my hearts so that I can try again.

As a user, I want to win the game when I collect a required number of flowers so that I can complete the objective.

**Game Flow**

1. **Initializing the Game State**
   * Setting the initial position of the character (like starting coordinates).
   * Setting the initial number of lives (3 hearts).
   * Setting the initial count of collected flowers (0).
   * Caching DOM elements for lives tally, flower count, game over message, and win message.
2. **Rendering the Initial Game State**
   * Updating the DOM to show the initial position of the character.
   * Displaying the initial lives tally and collected flowers count.
   * Hide the game over and win messages.
3. **Listening for Keypress Events**
   * Adding event listeners for the WASD keys to control character movement.
     + 'W' key moves the character up.
     + 'A' key moves the character left.
     + 'S' key moves the character down.
     + 'D' key moves the character right.
   * Ensure smooth and responsive movement of the character on keypress.
4. **Checking for Collisions**
   * On each movement, check if the character collides with a flower.
     + If a collision is detected, increment the collected flowers count and remove the flower from the game.
   * Check if the character collides with a thorn.
     + If a collision is detected, decrement the lives count and remove the thorn from the game.
   * Update the DOM to reflect changes in lives and collected flowers.
5. **Updating Lives and Collected Flowers Count**
   * Continuously update and render the lives tally on the screen.
   * Continuously update and render the collected flowers count on the screen.
   * If the lives count reaches zero, display the game over message.
   * If the collected flowers count reaches the required number, display the win message.
6. **Displaying Win or Game Over Messages**
   * Show a win message when the player collects the required number of flowers.
   * Show a game over message when the player loses all lives.
   * Hide these messages at the start and reset them appropriately during the game.
7. **Allowing the User to Restart the Game**
   * Adding an event listener for a restart button.
     + On click, it reinitializes the game state.
     + Reset the character's position, lives count, and collected flowers count.
     + Hide the win and game over messages.
   * Ensure the game can be restarted smoothly, allowing for multiple playthroughs.