Task 1: Develop Graphical User Interface (GUI) for Snake Game Application

- Description: Design and implement the graphical user interface (GUI) for the Snake game application, providing players with an intuitive and visually appealing interface to interact with the game.
- Specific Requirements:
    - Design a user-friendly interface that includes essential game elements such as the game board, snake, food, and score display.
    - Implement GUI components using appropriate libraries/frameworks such as Tkinter, Pygame, or PyQt.
    - Design and integrate interactive elements such as buttons for starting/restarting the game, pausing/resuming gameplay, and adjusting game settings (if applicable).
    - Ensure responsive design principles are followed to accommodate various screen sizes and resolutions.
    - Incorporate visual feedback mechanisms to enhance user experience, such as highlighting active game elements or displaying game over messages.
    - Test the GUI implementation for compatibility across different platforms and screen resolutions.
- Expected Outcome:
    - A fully functional GUI for the Snake game application that provides players with an immersive gaming experience.
    - The GUI should effectively communicate game status, facilitate user interactions, and maintain consistent visual aesthetics.
- Assignees:
    - Frontend Developer (Responsible for GUI design and implementation).
- Due Date:
    - [Insert Due Date]

Task 2: Implement Automated Testing for Game Logic

- Description: Develop automated tests to ensure the correctness and reliability of game logic and core functionalities in the Snake game application. Automated tests will cover various aspects of gameplay, including movement, collision detection, and score calculation.
- Specific Requirements:
    - Write unit tests using a testing framework such as pytest or unittest.

- Test the movement mechanics of the snake in all directions (up, down, left, right).
- Verify that the snake collides with walls and itself appropriately.
- Ensure correct handling of food consumption and score incrementation.
- Test edge cases such as when the snake reaches maximum length or collides with food.
- Implement parameterized tests to cover different scenarios and configurations.
- Expected Outcome:
  - A comprehensive suite of automated tests that validate the behavior of game logic under various conditions.
  - All tests should pass consistently to indicate the robustness of the game's core functionalities.
- Assignees:
  - Backend Developer (Responsible for writing unit tests).
- Due Date:
  - [Insert Due Date]

Task 3: Implement Automated GUI Testing for User Interface

- Description: Develop automated tests to ensure the functionality and usability of the graphical user interface (GUI) in the Snake game application. GUI testing focuses on validating user interactions, visual elements, and overall user experience.
- Specific Requirements:
  - Utilize GUI testing frameworks such as Selenium or PyAutoGUI to simulate user interactions with the application's interface.
  - Test basic UI elements such as buttons, input fields, and menus for responsiveness and functionality.
  - Verify that the game screen displays correctly with appropriate graphics and layout.
  - Test user interactions such as clicking, dragging, and keyboard input to ensure smooth gameplay.
  - Validate error handling and feedback mechanisms for user input errors or invalid actions.
  - Implement tests for UI accessibility features to ensure compatibility with assistive technologies.
- Expected Outcome:

- A suite of automated GUI tests covering key aspects of the user interface, including responsiveness, visual appearance, and user interactions.
- All GUI tests should pass consistently, indicating the usability and robustness of the application's interface.
- Assignees:
  - Frontend Developer (Responsible for implementing GUI tests).
- Due Date:
  - [Insert Due Date]