COMPENG 2SH4 Project – Statement of Contribution

Your Group Name	fortnite vbucks
Your Name	Dhruv Anand
Your Team Member's Name	Vansh Dhodi

You must complete this statement of contribution without discussing it with your project partner, i.e., individually. Your statement should be concise (at most one-and-a-half page). It has three parts:

1. Tell us about your own contribution to the development of your COMPENG 2SH4 project. For example, you can tell us about which project iterations (as mentioned in the project manual) and C++ project classes that you worked on and completed. You can provide a concise answer either in paragraph form or through bullet points.

As Developer 1, my contributions were primarily focused on the **GameMechs** class and game integration, ensuring a seamless and functional implementation of the game's core mechanics:

- **Iteration 1B - Game Mechanism Implementation:**
  - Designed and implemented the **GameMechs** class to centralize the game logic, including board dimensions, score updates, input handling, and game state flags (exitFlag and loseFlag).
  - Refactored procedural components from PPA2 and PPA3 into an object-oriented structure, improving modularity and scalability.
- **Game Loop and Integration:**
  - Integrated the **GameMechs** class with the **Player** and **Food** components, ensuring smooth interaction between the game elements.
  - Managed input flow, converting user inputs into corresponding game actions such as movement, quitting, and collision detection.
- **Testing and Debugging:**
  - Conducted iterative testing of the game mechanics, verifying wraparound logic, collision detection, and score updates.
  - Debugged issues with user input processing and ensured proper synchronization between the game's visual output and internal state.

2. Repeat Part 1 above but this time tell us about your project partner's contribution to the development of your COMPENG 2SH4 project.

My partner, Developer 2, focused on implementing and refining the Player and Food classes, delivering major functionality for player movement and food generation:

- **Player Class Development:**
  - Adapted FSM logic from PPA3 into the Player class, creating a robust structure for player movement and direction updates.
  - Developed collision detection for self-collision and integrated dynamic body growth using the objPosArrayList class.
- **Food Class Implementation:**
  - Designed the Food class, generating random food positions while ensuring no overlap with the snake or game borders.
  - Added special food items (X and Y) with unique scoring effects, expanding the gameplay mechanics.
- **Object Position Management:**
  - Validated and finalized the objPosArrayList class, ensuring smooth list operations for handling the snake body and food positions.
  - Tested and debugged issues related to position tracking, improving game performance and reliability.

3. Tell us about your experience in your first collaborated software development through this project – what was working and what wasn't. If you are a one-person team, tell us what you think may work better if you had a second collaborator working with you.

   Collaborating on this project was an enjoyable experience. The iterative workflow and clear responsibilities division allowed us to progress steadily. However, some integration challenges arose due to differing priorities outside of school, requiring additional time for alignment. There were also hardware issues happening on my partner's side, not allowing him to "make" and run the program. Due to this, we worked on much of the code in person together, taking turns coding on a single laptop. Establishing shared standards and conducting integration tests more frequently would have improved our efficiency. Overall, this project significantly enhanced my understanding of OOD principles and teamwork in software development.