COMPENG 2SH4 Project – Statement of Contribution

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Your Team Member's Name: Mahi Patel

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.
    - **In Iteration 0**, I collaborated with my partner to understand the skeleton code and the project structure. We both worked on completing the implementation of the objPos and added all the required special member functions to ensure safe memory management. We validated the functionality of the objPos class, to make sure it worked as intended before moving forward because it served as the foundational building block for our code
    - **In iteration 1B**, I converted procedural code from PPA2/PPA3 into the GameMechs class. I also added key features l8ike game board size, handling player inputs, managing exit conditions and cleaning up resources.
    - **In iteration 2**, I collaborated with my partner to develop and test the objPosArrayList class for tracking the snake's body and food positions. We focused on debugging and ensuring that our code passes the test cases, and we also added an out of bounds test case to ensure it is also tested for being out of bounds. We worked on the random food generation logic, and we ensured that the food wouldn't randomly generate on top of the snake.
    - **In iteration 3 – Feature 1**, I built the logic for the snake's movement by adding new head segments and removing the tail to simulate the snake moving. Implemented the increasing in length logic whenever the snake collides with food. Feature 3- We tested it thoroughly to ensure smooth transitions for the snake and to make sure it randomly generates food each time. We also added a condition if the snake collides with itself which ends the game.
    - **In the Bonus**, we implemented logic that generated 3 foods, one of them being a super food that gives 20 points when eaten but doesn't increase the snake's length. We made sure that it randomly generated regular food (2) and a special super food (1) each time.

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

    - **In iteration 0**, my partner and I worked together to review the skeleton code and ensure we both understood how the objPps class worked. She contributed to implementing the objPos class and validating its functionality as the foundation of the project.
    - **In iteration 1A**, she took lead in refactoring the FSM from PPA# into the player class, converting procedural logic into an object-oriented design. She implemented movement controls and position updated for the snake's head, ensuring that it is functional withing the game board.
    - **In iteration 2**, She collaborated with me to implement the objPosArraylist class, ensuring it passes all test cases and adding extra to test for out of bound access. We also worked on refining and validating random food generation, ensuring that when food is randomly generated it didn't overlap with the snake's body.
    - **In iteration 3- Feature 2**, She implemented logic to detect when the snakes head collided with food ensuring that it grows in length. And ensuring random food generation each time.
    - **In the Bonus**, she collaborated with me to implement the super food feature, ensuring that 3 were randomly generated and making sure they are generated in different position and not on the snake. The super food generated rewards 20 points but doesn't increase the snake's length.

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.

    - What worked:
        - Our task division was clear and when we collaborated together on the iterations, we were both very open to the others ideas which allowed us to be more efficient and also allowed for easier implementation of ideas.
        - Regular communication helped us stay on track with the project and identify issues early in the project.
        - It also helped a lot when we collaboratively debugged our code. Combining both of our perspectives made us work very effectively and efficiently to debug the issue at hand.
    - What didn't work:
        - In the beginning when we were splitting up parts for iteration 1, we noticed that it took longer to finish our parts as we couldn't designate specific time for them in our schedules, so when we collaborated on it together for the other iterations and we were able to designate a specific time in both our schedules to ensure we finish the iterations and the project all while being time efficient.

- Overall Reflection:
    - The project was a great learning experience, both technically and in terms of teamwork. I gained valuable experience regarding communicating effectively with your partner and combing strengths to create a functional snake game.