**Postmortem: Climate Impact Game**

**Initial Design:**

The original concept for this game was inspired by the pressing issue of climate change, specifically rising sea levels and their impact on human populations. The game idea was simple: save people from rising waters by moving them upward as the sea level rises. The gameplay was designed with three game states: a title screen, active gameplay, and a game over screen. The player would press the space bar to move people upward to safety, and the challenge would increase as the sea level rose faster over time.

The main objective was to build a game that combined simplicity with an important message about climate resilience. I wanted to create a dynamic experience where players felt the urgency of saving people from a flood, all while managing increasing challenges.

**How the Design Changed:**

Over the course of development, several design elements were altered to improve gameplay and engagement as follows:

1. The code started by adapting the particle system code (Assignment 6) into a simple game where the player can control people (represented by particles) and move them to a higher position to avoid the rising sea level. This adaptation keeps the particle system as a central part of the gameplay. Chat Gpt was used to create an updated code version where particles (people) appear randomly at intervals instead of based on mouse clicks. Also, ChatGPT was provided with the previous assignments and the project proposal document.
2. The initial code focused on setting up the title screen, gameplay, and game over state. It also introduced player-controlled movement of people and a rising sea level mechanic.
3. Then, the code was refined such that the particles appear randomly, not based on the player’s click.
4. Incorporated a gradual increase in the speed of people moving upwards, adding a challenging element to the gameplay (creating acceleration)
5. Then, the code was adapted to calculate the lost or saved people (not only saved persons). Added conditions to check whether people are saved or lost based on their position relative to the sea level (creating a Saving and Losing Logic)
6. Made the sea level rise faster over time to create a dynamic and tense experience.
7. Improved the game's overall flow, including random starting positions for people, smoother game transitions, and the reset mechanism.

**What Went Well (developed easily through ChatGPT)**

Several aspects of the project went smoothly:

1. **Game Logic and Structure**: The game’s core structure with three states—title, gameplay, and game over—was easy to implement and worked well as the foundation of the game.

**What needed human input to the chatGpt code**

1. **Responsive Controls**: The input mechanism, where players press the space bar to move people upward, was responsive and simple, making it easy for players to understand and engage with.
2. **Dynamic Challenge**: Increasing the sea level’s rise speed over time made the game progressively more difficult, creating a natural challenge curve that engaged players for longer periods.
3. **Handling Edge Cases**: Early in development, I noticed that sometimes people would get stuck near the edges of the screen or under the sea level without being properly “lost.” I had to adjust the conditions for when people were removed from the game to ensure the game handled these situations correctly.
4. **The displayed text**: We noticed that the ChatGPT cannot display the final text correctly (also happened in the dragster assignment), so we had to do this manually

**Challenges Faced:**

Some key issues arose during development:

1. **Balancing Difficulty**: One major challenge was finding the right balance between how fast the sea level rose and how quickly people could be moved to safety. Initially, it was too easy to save all the people, and there wasn’t enough challenge. To address this, with the help of a developwer we tweaked the speed increase for both the sea level and the people, ensuring that the game became more difficult but still fair as time went on.
2. **Player Feedback**: I initially overlooked providing players with enough feedback on how they were performing. The addition of the “people saved” counter in the game over screen helped give players a sense of achievement and goals to aim for in future rounds.

**Lessons Learned:**

Through the process of developing this game, I learned several valuable lessons:

1. **Iterative Design is Key**: Game design benefits greatly from iterative testing and adjustments as well as collaberative play. Small changes, such as tweaking the speed of rising waters or the rate at which people can be saved, had a significant impact on the overall gameplay experience.
2. **Balancing Challenge and Fun**: Making a game too easy can make it boring, but making it too hard can frustrate players. Striking the right balance requires testing with different scenarios and carefully tuning gameplay mechanics.
3. **Simple Mechanics Can Be Powerful**: Even with simple controls like pressing a single key, you can create an engaging and challenging experience. The combination of growing tension and a single, intuitive control scheme worked well for this game.

**Future of the Project:**

Looking ahead, there are several areas where this game could be expanded or improved:

1. **Additional Gameplay Elements**: One possible direction is to introduce new obstacles or power-ups. For example, players could collect items that slow down the sea level rise or temporarily boost the speed at which people can be moved upward.
2. **Levels and Difficulty Progression**: Expanding the game to have multiple levels with varying difficulty would add more depth to the experience. Each level could introduce different challenges, such as faster sea level rises or more people to save.
3. **Visual and Audio Enhancements**: Improving the game's graphics and adding sound effects or background music could greatly enhance the overall experience. For example, sound cues could alert players when the sea level is getting dangerously high.
4. **Educational Component**: Given the game's theme, an educational mode could be developed where players learn about real-world climate issues and how rising sea levels affect populations globally. This could turn the game into a tool for raising awareness and educating players on climate change.

In conclusion, this project has been a rewarding experience in game development, combining simple mechanics with a meaningful message about climate change. The game provides a foundation that can be built upon in the future, with potential for more engaging gameplay and educational content.