Climate Heroes: Save the Planet – Full Project Report

1. Introduction

Climate Heroes is an educational and entertaining digital board game designed to raise awareness about climate change through interactive gameplay. Players take turns navigating a sustainability-themed board, making impactful decisions that reduce their carbon footprint and help them reach the ultimate goal: achieving **Net Zero** emissions.

2. Game Theme & Justification

The central theme revolves around global climate action and sustainability. The game integrates real-world environmental concepts such as renewable energy, reforestation, and sustainable transport. By gamifying climate education, *Climate Heroes* helps players internalize environmental responsibility and understand the effects of human decisions on the planet.

3. Potential Impact

The game aims to increase awareness of sustainable living and inspire behavioral change. It promotes environmental literacy among students, educators, and casual players. By blending fun with learning, *Climate Heroes* encourages climate-conscious decision-making, teamwork, and a spirit of environmental stewardship.

4. Technology Stack

The project is developed using modern web technologies and lightweight frameworks suitable for interactive browser-based games.

- Frontend: HTML5, CSS3 (Grid layout, animations, modern UI design)
- Game Logic: JavaScript (DOM manipulation, state management, turn-based system)
- Libraries: None (built purely with vanilla JS for educational clarity)
- AI Tools: ChatGPT (concept ideation, rule balancing, and narrative assistance)
- Design: Custom CSS gradients and transitions for immersive game feel

5. Overview of Game Mechanics

The game board consists of 25 tiles, each representing a climate event or action. Players roll dice to move forward and encounter tiles that either reduce or increase their carbon footprint. Strategic decision-making and luck both play key roles as players race toward achieving Net Zero before their opponent.

- ■ Players take turns rolling dice (1–6).
- ■ Each tile affects the player’s carbon level based on its type (action, crisis, or neutral).
- ■ Positive actions lower emissions and increase the player’s action count.
- ■ Crisis events increase carbon emissions and pose setbacks.
- ■ The first player to reach the final tile (Net Zero) wins the game!

6. Reflection

Developing *Climate Heroes* was an insightful journey combining environmental education with interactive design. The project demonstrates how basic web technologies can deliver engaging educational tools. Through iterative testing and creative design, the game successfully merges

learning objectives with entertainment value.

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