

SUPERCOLD - Phase 2 Report

Team Information

Name	ID
Marwan Mohammed	9220808
Youssef Tarek	9220990
Amir Kedis	9220166
Moamen Mohammed	9220886

Project Contributions

Marwan Mohammed

- **Lighting System**
 - Developed PBR (Physically Based Rendering) materials for realistic surface interactions.
 - Implemented two different types of lighting: Point and Directional lights.
- **Post-Processing Effects**
 - Added bloom.
- **Environment Design**
 - Designed multiple levels and implemented model loading and rendering.

Youssef Tarek

- **Game Progression System**
 - Designed and implemented the game progression system, including level transitions and player stats.
 - Integrated all game mechanics into the play state.
- **Time Scaling Core Mechanic**
 - Developed the time dilation mechanic, allowing players to slow down time.
 - Implemented the penalty system for using time dilation.
- **Text Rendering**
 - Implemented a text rendering system for displaying game messages.
- **Player HUD**
 - Added crosshair functionality and customizable HUD elements like a pop up for picking up items.

Amir Kedis

- **FPS Controller**
 - Developed the first-person controller with smooth camera movement and aiming mechanics.
- **Post-Processing Effects**
 - Implemented depth of field and motion blur effects to enhance visual fidelity.
 - Added visual effects for the time dilation mechanic.
- **Animations**

- Created animations for entities, unfortunately, the animation system was not fully implemented in the final build.

Moamen Mohammed

- **Physics System**
 - Used Bullet Physics for realistic physics simulation and collision detection.
 - Implemented a custom physics engine for advanced collision callbacks.
- **Audio System**
 - Used OpenAL for 3D audio effects, including spatial sound and environmental audio.
- **Weapon System**
 - Developed a weapon system to handle dropping, picking up, throwing, and shooting weapons.
- **Enemy AI**
 - Created AI behavior for enemies, including state machines for patrolling, chasing, attacking, and searching.

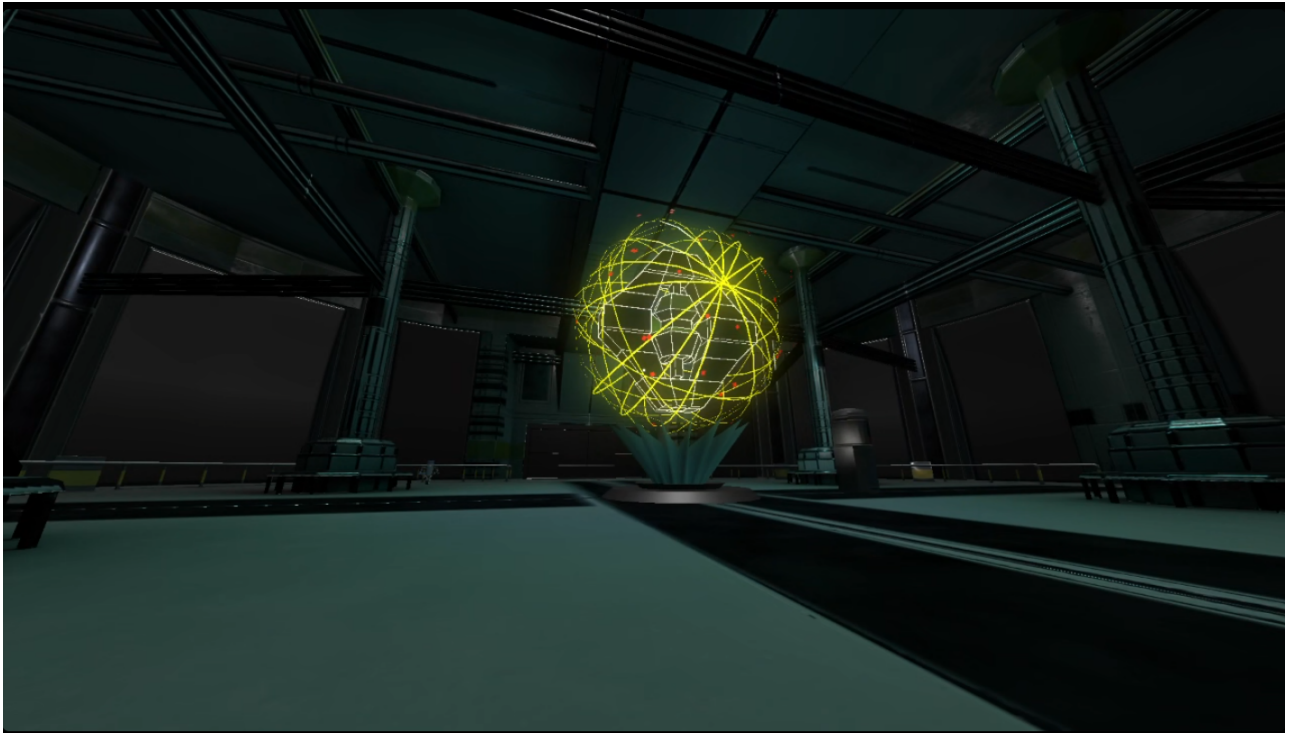
Screenshots

- **Freeze Time Mechanic:**



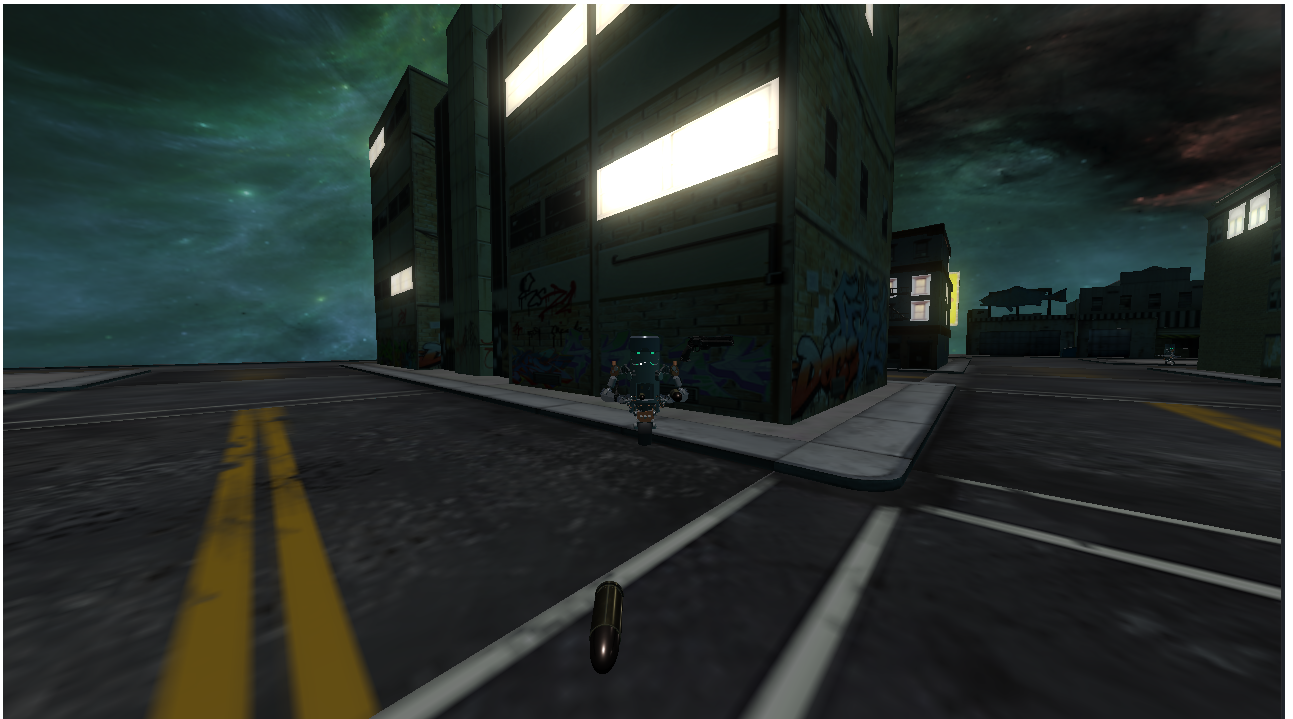
The freeze time mechanic in action, showing the distinctive visual effect when time slows down during gameplay.

- **Level Design:**



An overview of the level design, showcasing the environment and layout of the game world.

- **GamePlay and Mechanics:**



Gameplay screenshot demonstrating the core mechanics, including player movement, weapon throwing, and enemy interactions.