Final Project Report: "Infernal Descent"

Course: CMIS 4120 / CSC4840
Team Members:

- **Brandon-Joshua Hines** – Character/Enemy Animations & Combat Mechanics
- **Zeba Karobi** – Level Designer (Environment design, asset integration, destructible props) and final report
- **Adnan Khan** – UI/Visual Effects, Audio, Special Effects

Github Repo: https://github.com/Zkarobi/GameDevGroupProject

Project Overview

Infernal Descent is a single-level, isometric dungeon-crawler inspired by *Hades*. The player begins in a hellish stone chamber, must defeat a powerful boss, and can either replay the level or exit upon victory. We originally proposed procedurally/modularly generated levels, but after receiving feedback from the professor, we simplified scope to ensure a polished, complete experience.

Implemented Features

- **Fully designed boss arena**
  - Created using the *FANTASTIC Dungeon Pack*
  - Includes hand-placed modular walls, pillars, props, and lighting
  - Implemented ambient fog and torch glow to set tone
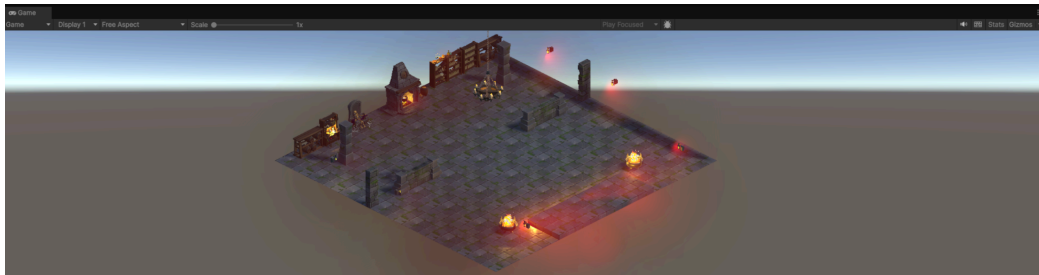
- **Destructible environment elements**
  - Custom C# `DestructibleWall` script using prefab replacement
  - Simulates environmental interactivity (future expansion ready)
- **Character controller and combat system**
  - Player movement and attack scripts
  - Boss spawns on raised platform with basic AI and attack logic
- **UI & special effects**
  - Designed main menu, pause screen, and win screen with stylized UI elements
  - Integrated music for all game states (menu, gameplay, pause, win)

○ Connected UI buttons to game logic (start, resume, replay, exit)

Team Contributions

- **Zeba Karobi**
  - Designed the full playable level
  - Integrated modular assets, lighting, fog, and props
  - Developed and tested destructible wall script
  - Set up spawn anchors for boss and player
- **Brandon-Joshua Hines**
  - Rigged and animated player and boss characters
  - Developed melee attack scripts and hit detection logic
  - Set up boss health and attack patterns
- **Adnan Khan**
  - Designed the user interface for start, pause, and end screens with custom fonts and layout
  - Added ambient wind sound for in-game atmosphere
  - Ensured seamless transitions between UI menus and gameplay states
  - Integrated all audio using Unity's Audio Source and Audio Listener system

Challenges Faced

- **Pivot Misalignment Issues:** when spawning destructible walls required multiple iterations and prefab refactoring.

- **Balancing Artistic Vision With Performance:** fog and lighting had to be tuned for readability and frame rate.
- **Merge Conflicts:** Collaborating through Git without scene merge conflicts.
- Managing AI: Enemy AI effecting movement; required some refactoring and simplifying the AI to make it work
- **Time Management and Productivity:** All three of us had a lot of group and individual projects for this class as well as other classes, so balancing everything became a struggle.
- **Special Effects:** would have liked to add special effects (audio and visual) when the player or boss strikes a target, but did not have enough time to do so.

Lessons Learned

- **Keep Project Scope Realistic:** simplifying and pivoting early helped us focus on quality over quantity.
- **Prefab design is crucial**: especially when building reusable, interactive systems like destructible objects.
- **Clear division of responsibilities:** helped us avoid delays and allowed each member to specialize and work effectively.

Standalone Build

The standalone Windows build is included in our submission ZIP. It can be launched without opening Unity.

Future Iterations

- Expand the game by adding modular, procedurally generated levels, each featuring a unique boss with distinct combat mechanics
- Enhance enemy AI to support advanced behavior patterns, including dodging, ranged attacks, and reactive responses
- Introduce a customizable boon system, allowing players to combine different abilities for varied combat strategies
- Integrate combat-specific visual effects (e.g., hit flashes, screen shake, elemental attacks) to increase gameplay immersion
- Add a rest hub area (inspired by *Hades' House of Hades*) where players can recover after defeat, purchase upgrades, and switch weapons before returning to battle

Conclusion

We're proud of what we built with *Infernal Descent* — a short, atmospheric prototype that showcases isometric design, destructible environments, and a foundation for engaging player combat. While inspired by *Hades*, our game stands as a unique interpretation, capturing the spirit of dungeon-crawling progression while introducing our own style and mechanics.

This project has not only deepened our understanding of game logic, AI, and Unity's development tools, but also highlighted the hidden complexity behind even the smallest game features — aspects we often overlook as players but now fully appreciate as developers. We explored systems like the Unity Asset Store, Shader Graph, and navigation AI, and learned how each contributes to a cohesive experience.

Infernal Descent has the potential to evolve into a much larger, multi-level dungeon crawler with unique bosses, branching boons, and a rest hub area for upgrades and progression. This final product represents both a strong prototype and a meaningful learning experience that brought together everything we've explored throughout the semester.