CS 440
The Descent
Group 24
Fernando Dominguez, Stephanie Beltran, Jovan Gvero, and Atulya Prasad

Have you ever wondered what it would be like to experience the underworld? Would you be willing to test your morality and hold the philosopher's stone? Well, *The Descent* is a cooperative survival horror game, inspired by the claustrophobic masterpiece *As Above, So Below*, where the only way out is literally down through layers of Hell, each one a delightful manifestation of the seven deadly sins. The Descent prioritizes resource management, environmental puzzle-solving, and coordinated teamwork as its core gameplay drivers.he system architecture supports five distinct player characters, each equipped with a unique tool that enables specific mechanical functions: Scarlett's alchemy book for crafting remedies, George's translation key for deciphering ancient inscriptions, Louise's combat capabilities for entity engagement, Cathy's camera for revealing hidden elements, and a fifth character defined by the absence of a specialized tool, serving as a baseline experiential reference. The game procedurally generates environmental variations across multiple levels, each representing a layer of hell and presenting unique threats, moral choices, and puzzle configurations. Player actions are tracked by a judgment system that influences narrative outcomes, creating multiple possible endings based on collective decision-making throughout the descent.

Part 1 and Part 2 focus on the user-facing and business dimensions of the game. These sections answer questions like: Who is playing this game? What scenarios will they experience? What constraints must the development team respect? The documentation identifies five stakeholder categories: gamers (the everyday players), horror enthusiasts (who crave intense emotional experiences), content creators (streamers and YouTubers who share gameplay with audiences), developers (the engineers building the game), and server administrators (who keep online multiplayer running smoothly). Each group has different needs and different levels of technical experience.

Performance specifications are also defined here. The game must run at a minimum of 60 frames per second on target hardware—meaning animations appear smooth rather than choppy. Network latency must stay below 80 milliseconds for players connecting from the same region as the game server; anything higher introduces noticeable delays between pressing a button and seeing the result. The game supports three to four concurrent players per session without performance degradation. It must run on PC, PlayStation 4, PlayStation 5, and Xbox Series X, and the entire installation cannot exceed 10 gigabytes of storage space.

Part 3 descends into the system's architectural substrate—a fancy way of saying "how the code is organized under the hood." This section uses Unified Modeling Language (UML), a standardized visual notation for designing software systems. Do not worry if UML looks unfamiliar; think of it as a diagramming language, much like a flowchart or a floor plan, that helps engineers agree on how different parts of the system will interact.

The final architecture balances creative ambitions with engineering constraints. It provides a solid foundation for implementation while preserving the atmospheric tension that defines the survival horror genre. For future software engineers, studying this architecture offers a practical lesson: great games are not built on inspiration alone. They are built on clear specifications, thoughtful system design, and a deep respect for the complexity hiding beneath every moment of the player.