Infinite Dungeon Survival — Game Design Document

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Abstract—**Infinite Dungeon Survival is a top-down twin-stick roguelike shooter for PC and web browsers. Players survive escalating waves of enemies inside a dystopian arena called *The Trials*, earning credits to purchase upgrades between waves. This GDD compiles the full project vision, mechanics and systems, narrative worldbuilding, level and encounter design, UI/UX and accessibility, production plan, and the semester schedule.**

I. INTRODUCTION

THIS document presents the complete Game Design Document (GDD) for *Infinite Dungeon Survival*. Section II outlines the overall vision and project info; Section III details core mechanics and systems; Section IV covers level and encounter design; Section V describes the development plan and schedule; Section VIII reflects on risks and future improvements; and Section IX concludes.

II. DESIGN

A. Project Info

Game Title: Infinite Dungeon Survival
Author/Team: Elliotte Wideman, Hunter Blake, and Chancelor Brown
Platforms: PC/Home computers and web browsers
Monetization: We currently don't have any plans to monetize this game at all.

B. Game Overview & Vision

High Concept: A top-down twin stick rougelike shooter game with infinite waves of enemies similar to *Enter the Gungeon* and *Smash TV*.

Game Summary: The game will focus on the player against a progressively difficult series of waves of enemies, hazards, and obstacles with the only goal being to survive as long as possible. The only hook is that it would be a fun, arcade like experience of a game.

Player Journey Snapshot: After the game starts, the player will be met with multiple waves of futuristic enemies that will attack the player. Every so often, they will likely be able to purchase an item or two from the game's shop. After ten minutes, the player likely would've been finished with at least 3 or 4 waves.

Unique Selling Points: The selling point is that it is an ambitious class project made by a group of people that enjoy video games and have demonstrated their interest and knowledge in game development by making this one.

Target Audience: The current audience would be our teacher, classmates, and anyone in the future that may see this game as a part of our portfolios.

Genre & Inspirations: The genre is an independent bullet hell or rougelike. This game takes inspiration from *Smash TV* and *Enter the Gungeon*.

Tone & Look & Feel: The tone is a bleak futuristic setting in a game arena. Excitement, tension, desperation, and resignation are the core feelings of the setting. It is planned to have a pixel art style for the game.

C. Software Design (System Interaction Overview)

Figure 1 shows the interaction among **Player**, **Enemies**, **Credits**, **Vendor/Upgrades**, and **Arena Hazards**. This supports the economy loop and informs implementation boundaries.
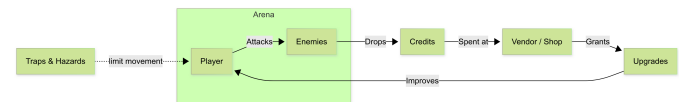

Fig. 1. System Interaction Overview — player attacks enemies, earns credits, buys upgrades at the vendor, while hazards constrain movement.

D. Aesthetic

A bleak, dystopian arena in pixel art. Rusted metal, flickering neon, and surveillance convey tension and desperation.

III. MECHANICS

A. Core Gameplay Loop

The player attacks the enemies and avoids their attacks and obstacles. When all enemies are defeated, the next waves follows up with a more difficult, randomized set of enemies and traps. Aside from progressing to the next wave, the player could occasionally be able to purchase items from the shop.

B. Player Progression

The only player progression there comes from the items they could purchase. The only other thing that grows over time is the challenge of each wave.

C. Controls & Input

The idea is for the player to use a controller with the left control stick being used to move the character and the right control stick to aim and shoot hence the genre, twin stick shooter. An alternative playstyle would be the keyboard and mouse for the respective controls.
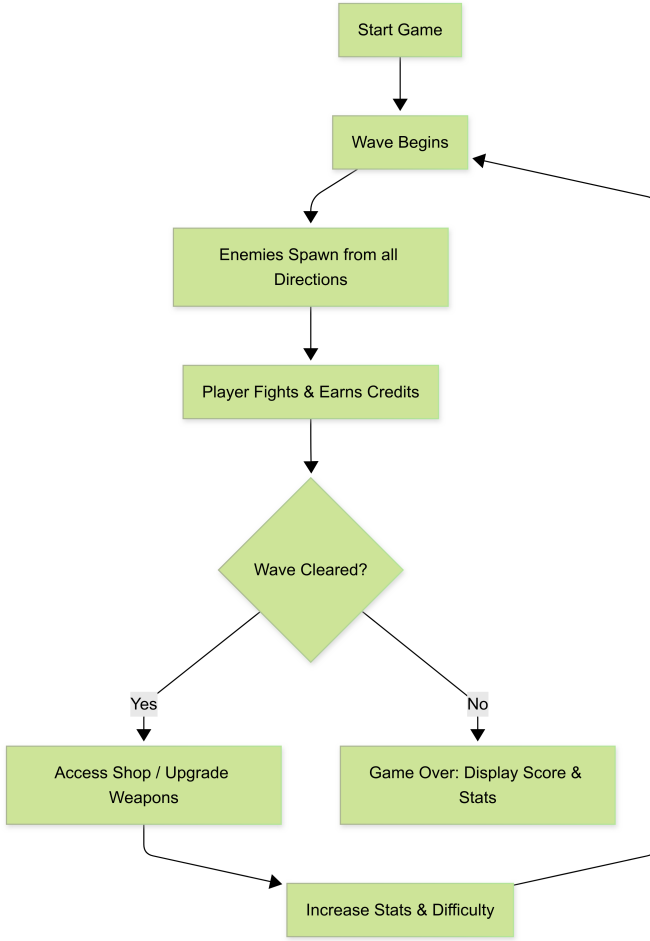
for each enemy combatant destroyed, which can be spent on upgrading the gun's attack damage, the AoE damage, or the player's maximum health. Combat is the focus of Infinite Dungeon Survival, emphasizing crowd control and spatial awareness as dozens of enemies swarm from all sides, requiring players to dodge projectiles, navigate deadly laser traps, and position themselves strategically while continuously attacking, with overall success measured by survival duration.

Interaction Mechanics: Following each successfully completed enemy wave, a mysterious vendor will appear to the player, offering the chance to upgrade the weapon's damage, AoE damage, or maximum health. Of course these come at a cost, and the player must fork over their hard-earned credits if they wish to purchase any upgrades. To properly weigh this decision, the player will be provided with a menu to interact with which displays the cost of each upgrade.

Economy & Resources: Credits, the game's primary currency, are earned by defeating enemy combatants, with the amount earned scaling proportionally to the difficulty level of the enemy. Credits are spent at the vendor who offers the player both attack and health upgrades, for a fee.

IV. LEVEL DESIGN

A. Objectives

Survive each timed wave by defeating all enemies that enter the arena. There is no traditional win condition. Instead, success is measured by how long the player survives and how many waves they complete before falling.

B. Structure & Layout

The game takes place entirely within a single sealed arena room. Enemies enter from all four cardinal directions (north, south, east, west), creating a confined battlefield that emphasizes crowd control and spatial positioning.

C. Gameplay Flow

Players survive waves of enemies using twin-stick controls to strategically move and shoot while dodging enemies and projectiles. After successfully completing each wave, the mysterious vendor appears, allowing players to purchase upgrades using earned credits from slain enemies. The cycle then repeats with an increasingly difficult enemy wave.

D. Interactive Elements

In addition to enemy combatants, the arena is outfitted with deadly laser traps which restrict the space in which the player can navigate, adding environmental hazards to the combat challenges.

E. Progression Gates

Progression through the arena is guaranteed as long as the player outlives a wave's time limit. Players must survive until the timer expires to proceed to the vendor phase and subsequently the next wave.

Fig. 2. Core Gameplay Loop — combat → clear wave → shop & upgrades → higher difficulty.

D. Difficulty & Challenge

The baseline difficulty of the game is based off of the waves. From the 1st wave, it would start off as not too bad and would progressively change to challenging, incredibly difficult, and eventually if the player is skilled enough, impossible to complete.

E. Feedback Systems

The player would receive a notification for when each wave starts or when they're about to enter a shop. A sound would also play whenever the character is hit and eventually, a theme would play upon the character's death.

F. Game Mechanics & Systems (Hunter Blake)

Core Mechanics: Infinite Dungeon Survival is a top-down 2D shooter where the player is a contestant trapped inside The Trials arena, forced to survive waves of drones, robots, and bio-engineered creatures released from all four cardinal directions by corporate overseers. Armed with a gun and a limited-use area-of-effect (AoE) attack, the player uses twin-stick style controls to survive increasingly difficult enemy waves in this dystopian combat spectacle. Credits are earned

F. Environmental Storytelling

The arena's decaying futuristic design features rusted metal panels, flickering neon accents, and crumbling infrastructure that accurately reflects the current state of societal collapse. Cameras mounted in the arena constantly monitor the player's every move, reinforcing their status as both a prisoner and a performer in a twisted dystopian game where survival is entertainment for the masses.

V. DEVELOPMENT

A. Team Roles

Elliotte Wideman — Project Lead, Programming, Documentation.
Hunter Blake — Narrative Design, Writing.
Chancelor Brown — Design Consultant, Mechanics Testing.

B. Milestones

Pre-Production (Sep 20–Oct 5): Brainstorming, finalize GDD.
Sprint 1 (Oct 19–Oct 28): Core mechanics (movement, shooting, enemy AI, HUD).
Sprint 2 (Nov 9–Nov 18): Wave system, upgrades, shop, tutorial.
Poster Submission (Nov 17): Poster + demo.
Final Build (Nov 23): Polished release.

C. Risks & Out-of-Scope

Balancing vs. wave difficulty; responsive controls; time constraints.
Out-of-scope: multiplayer, procedural generation, branching storylines.

D. Schedule (Gantt)

VI. PIPELINE

High-level integration plan: movement/combat modules, enemy AI spawners, wave manager, economy/vendor UI, and hazard controller integrate through event-based systems. Iterative sprints deliver playable checkpoints at each milestone.

VII. ASSET DEVELOPMENT

A. UI/UX

Health/Shield bar (top-left); Gold counter and wave timer (top-right); Ammo and cooldown indicators (bottom center). Menus: Main (Start, Settings, Quit), Pause (Resume, Settings, Main), Vendor (upgrades & costs), Game Over (waves, kills, total gold).

B. Accessibility

Full key/controller remapping; subtitles/captions; colorblind-friendly palette; adjustable text and HUD scale.

VIII. ANALYSIS

The project emphasizes tight control feel, readable pixel art, and a combat/upgrade loop that rewards mastery. Future improvements: broader enemy behaviors, additional traps, and optional procedural room variants.

IX. CONCLUSION

Infinite Dungeon Survival consolidates a focused design vision with a clear production plan and academic documentation. The result is a cohesive graduate-level project suitable for portfolio and course submission.
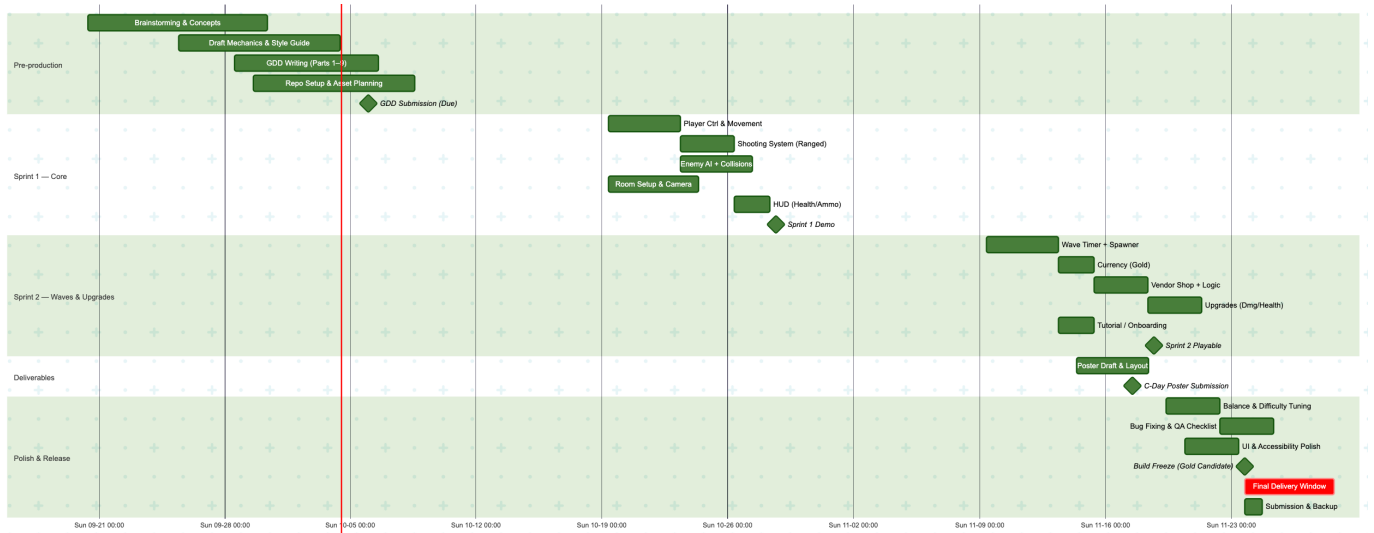
Fig. 3. Project Schedule — Gantt chart for *Infinite Dungeon Survival*.