# Game Design Document — NecroVault

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## 1. Game Overview

Genre: First-Person Shooter / Minimal Dungeon Crawler  
Engine: Unreal Engine 5  
Scope: Small prototype with 1–2 short levels  
Camera: First-person  
Art Assets: Mixamo-sourced character models and animations  
Core Goal: Survive each room by managing light and ammo, defeating waves of undead, and escaping deeper into the vault.

## 2. Core Concept

The player is a lone soldier sent into the NecroVault — an underground facility overtaken by the undead. The vault is pitch-black, and light is both your weapon and your weakness. Your flashlight burns away shadows that empower the undead but drains precious battery life. Balancing light usage becomes the key to survival.  
  
The player must traverse a small series of box-shaped rooms connected by doors, eliminating enemies and managing limited resources before the darkness overwhelms them.

## 3. Gameplay Loop

1. Enter a dark room.  
2. Activate flashlight to explore and spot enemies.  
3. Engage in short combat encounters.  
4. Collect pickups to survive longer.  
5. Exit through door to next room (progress or win screen).  
  
Win Condition: Reach the final room or survive a set time limit.  
Lose Condition: Player health reaches zero.

## 4. Core Features

• Light vs. Shadow Mechanic — Flashlight weakens enemies but drains over time. Darkness empowers enemies.  
• Simple Arena Rooms — Box-room layout with light-and-dark zones for dynamic gameplay.  
• Basic Combat System — Gun with limited ammo.  
• Pickups — Health, ammo, and flashlight batteries.  
• Dynamic Difficulty — Faster enemies or reduced light recharge in later rooms.  
• Stretch Goal — Boss enemy that uses ranged attacks.

## 5. Player Character

Name / Role: The Warden — a special forces soldier investigating the NecroVault.  
Model: “Swat Guy” from Mixamo.  
  
Abilities:  
- Move: Standard FPS movement.  
- Attack: Fire hitscan weapon.  
- Light Management: Flashlight toggle, drains power meter.  
- Interact: Pick up items and open doors.  
  
Stats:  
- Health: 100 HP  
- Speed: 600 units/sec  
- Flashlight Battery: 100% (drains over 30s of continuous use)  
  
Audio: Subtle breathing and radio static.

## 6. Enemies

Skeleton Zombie — Common melee enemy, empowered by darkness.  
Maw J Laygo — Stretch goal mini-boss, ranged attacks and smarter AI.

## 7. Pickups

• Health Pack — Restores 25 HP.  
• Ammo Crate — Refills 30% of ammo.  
• Mini Battery Pack — Restores 25% flashlight charge.  
• Mega Battery Pack — Restores 100% flashlight charge.

**Stretch Goal:**  
• Key Card — Unlocks secret rooms or chests.

## 8. User Interface (UI)

HUD Elements:  
- Health bar (bottom left)  
- Ammo counter (bottom right)  
- Flashlight charge meter (under health)  
- Crosshair  
  
Menus:  
- Main Menu: Play / Settings / Quit  
- Pause Menu: Resume / Restart / Quit  
- End Screen: Win / Lose summary with replay option.

## 9. Gameplay Twist — Light vs. Shadow

Light = Safety, weakens enemies but drains battery.  
Darkness = Danger, enemies are more aggressive.  
  
In Light: Enemies take more damage, move slower.  
In Darkness: Enemies deal more damage, move faster.  
Battery Low: Flashlight flickers, limiting vision.

## 10. Level Design

Environment: Box-shaped rooms connected by doors. Lighting zones create tactical tension.  
Example Progression:  
Room 1 — Tutorial — one enemy, a battery pickup.  
Room 2 — Two enemies, limited light source.  
Room 3 — Swarm encounter, battery scarcity.  
Final Room — Mini-boss or timed survival.

## 11. Audio / Visual Style

Sound: Reverb-heavy gunfire and ambience.  
Music: Low drones that intensify in combat.  
Lighting: Heavy use of darkness and flashlight.  
Post-process: Flicker and chromatic distortion when low battery.

## 12. Stretch Features

• Procedural room layout.  
• Score/leaderboard system.  
• Light upgrades.

## 13. Technical Notes

Player Pawn: Unreal FPS template.  
AI: Behavior Tree + NavMesh.  
Pickup Logic: Overlap triggers.  
Battery System: Float variable drains over time.  
Game Mode: Tracks progress and score.