This is the design document of our CSE5912 project. This document contains the current game ideas and plans we had and what we want to work on for future timeboxes. Everything in this document will be subject to changes.

**Update Logs:**

1/18/2022 by Jason Lian

1/20/2022 by Hongda Lin

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**Game Name:** Project Dungeon Slayer

**Core Game Mechanisms**:

This game has a combination of FPS and RPG system as its core mechanism. It will have first-person viewpoint, various range and melee weapons, and has a typical FPS game controlling. (Add further description of the ‘randomness’ of the game)

What we want the player to be able to do in our game:

1. Shoot, melee, jump, switch between weapons… common things in a typical FPS game.
2. Explore the vast dungeon to find equipment, items, skills, etc.
3. Get Exp, level up, and get stronger, at least numerically. (Maybe unlock powerful abilities and other cool things.)
4. Play around with characters that have distinct play styles, depending on their advantages/disadvantages and abilities.
5. Fight with dangerous enemies and mighty bosses, survive from traps in the dungeon and find the path/key to another level.
6. Maybe some simple puzzle solving.
7. …

**Main Art Theme:**

The concrete details on art style and design are still going to be dependent on the assets we are going to use, but we already have a general direction. The game will be in low-poly style, with a DND-like western dark fantasy art setting. The general color-tone and lighting is still up to be decided but maybe we should use a great contrast ratio and other effects to make the game colorful. Although the game is set in western fantasy art style, it doesn’t need to strictly follow it: for example, we can have full-auto weapons while still having a fantasy setting.

**Systems:**

Range/Melee Weapons

Skills/Abilities

Character Selection

Level Up

(possibly) Skill Tree

(possibly) Accomplishment

(possibly) Weapon Customization

…

**World Setting:**

Earth was invaded by creatures from another world. Inhabitants from that world flooded our planet through portals that connect the two worlds. The main character’s quest is to teleport to the other world, beat the leaders of those strange creatures and find a way to close all the portals.

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**Concrete Numerical Settings:**

**Player:**

**Enemies:**

**Weapons:**

**Skills:**

**…**

**Finite State Transition Diagram:**

…

**Team Name:**

**Game Name:**

**Team Goals/Game:**

**Our team decided to combine FPS with RPG elements as our game theme. The game will focus on giving players an awesome first-person shooting experience like Gunfire Reborn and exploring level design, skill trees, and customizable elements in RPG Dungeon Crawlers.**

**Game Development Stages:**

**Stage 1: Basic Game Framework (Timebox 1~2: 4 weeks)**

1. **Basic FP controlling with the player being able to walk, run, jump, sprint and crouch.**
2. **Core mechanisms in a typical FPS game, including shooting, fighting, aiming, and reloading.**
3. **Apply basic animation to player movement and weapon.**
4. **Basic environment design and set up. (reference Darkest Dungeon)**
5. **Some shootable enemies and basic enemy mechanism, simple AI, health bar, armor… (reference Gunfire Reborn).**
6. **Basic UI elements, player health, bullets remain, enemy, pausing...**
7. **Music.**
8. **Brainstorming for background setting (A teleported soldier who accidentally teleported into a dark dungeon where he needs to fight enemies, explore dungeon, level up, search for weapons, collect important materials and fight boss to go back to his world)**

**In Summary: Basic FPS frame work, Environment, Simple UI**

**Stage 2: Game details, Game mechanisms, More playable elements. (Timebox 3~6: 6 weeks)**

1. **Have different weapons available for the player to use. (AK, M4…)**
2. **Design customizable weapon system where the player could collect attachments to design their own weapons.**
3. **More realistic FPS experience: recoil, camera shake, firing effect, sounds…**
4. **Cool FPS mechanisms including bullet-time, the ability to zoom (sniper), dashing, double jump, enemy freezing, bullet tricks and ricochet, wall running, lean shooting (reference Gunfire Reborn, Titanfall)…**
5. **Design basic exp system, loot system, skill trees to level up the player with basic abilities(health, armor, the mechanisms above...)**
6. **Design different levels including lobby, different maps, different enemies, mimi boss…**
7. **Enhanced enemy AI and path finding, enemy animations**
8. **More player interaction with NPCs, dialogue systems, quest system, environment interaction (door, treasure box..)**
9. **Explore Unity Lighting with Post Processing effects, Particle systems, VFX, shader…**
10. **Polish better UIs, adjustable music, achievements…**
11. **Detailed story line, (Possibly) an open cg**
12. **…**

**In Summary: develop a better fps game like Gunfire Reborn as close as possible**

**Stage 3: Polishing (Timebox 7: 2 weeks)**

1. **Refine our code and game mechanisms**
2. **Explore different Unity effects like rain, flog… (environment effects)**
3. **Design our fake NFT shader system for weapon(reference csgo)**
4. **More documentation and video record**
5. **(Possibly) Apply networking or Unity job system (brust) on enemy**

**In Summary: Refine the semester work, built the final executable**

**Possible Obstacles:**

1. **Unfamiliar with Assets, especially the fps pack we are using.**

**Solution: We only apply the model and animation and coded the FPS system by ourselves.**

**Assets Used & Tutorial Consulted:**

**Tools Used: Github, Discord, MicrosoftTeam…**

**Meeting: Every class + 20 mins, Mon: 3pm-4pm (in-person meeting), Tue: 8pm-9pm, Thr: 8pm-9pm, weekends..**

**Team Manifesto:**

**Member Roles:**

**Hongda: Player & Weapon Logic, Animation, Camera…**

**Jason: Enemy AI, Environmental Design, Copywriting**

**Baihua: UI, Localization (English & Chinese), Game mechanisms**

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