Project Definition Document

Computer Science with Games Technology

First-Person Shooter implementing Key Game Design Principles

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*\_insert consultant name\_*

The project was proposed by myself

Word count = \_\_\_

**Problem to be solved:**

For my project, I want to develop a first-person shooter game that will incorporate key game design principles. Alongside the game, I want to create a short paper going into detail about each principle, addressing topics such as why is the principle important, good and bad examples of the principle in popular games, how a game designer could implement it into their game and how I have implemented it into my game.

Some of the principles I will cover include Challenge, Motivation, Flow, Feedback, Reward and Punishment.

The existing knowledge about game design “The Psychology of Games” (Udeemy course by PixelCademy), “Fundamentals of Game Design” (Ernest Adams), “Game Feel: A Game Designer`s Guide to Virtual Sensation” (Steve Swink), “Games, Design and Play: A Detailed Approach to Iterative Game Design” (Colleen Macklin / John Sharp )

What principles do I like in games and what games?

Principles I think are missing from certain games?

**Project Objectives:**

Main Objective:

This game will be a well-rounded First-person shooter incorporating at least 1 good example of each key game design principle.

Write-up objective:

This project shall produce a write-up of at least 10 game design principles, their necessity in games, good and bad examples of the principle, how to implement them into a game and how I have implemented them into my game

Game-Specific Objectives:

1. Objectives for the Player:
   1. The player should be able to:
      1. walk, run, jump and crouch
      2. Shoot
      3. take damage by being hit by an enemy
      4. take fall damage
      5. shoot a variety of guns
      6. pick up guns
      7. use throwables
      8. utilise a weapon wheel
      9. pick up more ammo
   2. The player should:
      1. slow down temporarily after taking damage
      2. aim down sights with the gun
2. Objectives for Map Design:
   1. The map should have:
      1. 3 traversable buildings
      2. a 4th building, inaccessible but occupied by enemy snipers
      3. loot chests
      4. 4 different types of enemies including the main boss
      5. at least 2 hidden secrets, rewarding players who explore
3. Objectives for Enemies:
   1. There should be 4 types of enemies
   2. The small enemy should:
      1. be easy to kill
      2. unintelligent
      3. utilise small weapons
   3. The medium enemy should:
      1. have the same health as the player
      2. should be slower than the player
      3. try to use cover occasionally
   4. The strong enemy should:
      1. have more health than the player
      2. should be quick
      3. should be able to use a wide range of weapons
      4. should be intelligent and always use cover
   5. The boss should:
      1. have at least 4 different attacks
      2. have 2000 health
      3. get more aggressive the lower its health gets
4. Objectives for Progression:
   1. The player should:
      1. receive xp for every kill
      2. receive xp for every chest opened
      3. potentially level up 5 times
      4. level up based on xp earned
      5. receive unlocks after every level
5. Objectives for Visuals:
   1. There should be a:
      1. visual hitmaker when the player shoots an enemy
      2. visible difference in the hitmaker when the player hits a headshot
      3. visual displayed when either a player or enemy fires their weapon
      4. visual to inform the player they have levelled up
      5. visual for throwable explosions
6. Objectives for Loot:
   1. There should be:
      1. a chance of ammo being dropped when an enemy dies
      2. a chance of a weapon being dropped when an enemy dies
   2. The chests should:
      1. drop some ammo as standard
      2. drop additional items such as health packs or ammo refills occasionally on chance
7. Objectives for HUD:
   1. The HUD should:
      1. display the player’s level
      2. display the ammo of the current gun
      3. display a mini-map of where the player is
      4. display a compass
      5. display a crosshair for the player’s gun, the crosshair should change based on the gun
      6. disappear when the player aims down sights with the gun
8. Objectives for Audio:
   1. The music should change with each building and fit the theme of the building
   2. There should be:
      1. a sound effect for each gun firing
      2. a sound effect for hitmakers
      3. a slightly different hitmaker sound when a player hits a headshot
      4. an audio queue when the player takes damage
      5. There should be an audio queue to inform the player they have levelled up
      6. spontaneous noise from the enemies as if they’re talking
      7. footstep audio for the player and enemies
      8. The footstep audio should be silenced if the player is crouching
      9. player character voice clips to help the player navigate the world and understand the story
      10. audio for throwable explosions
9. Objectives for the overall game?
   1. The game should:
      1. checkpoint the player after completing every floor in a building
      2. revert to these checkpoints when a player dies
      3. be able to be saved by a player
      4. be able to record high scores based on how much xp the player earned and store it in a table
      5. be able to record the fastest times players completed the game and store that in a table
      6. be able to be paused at any time
      7. have achievements that the player can unlock through completing things in-game
      8. display the set of controls to the player
      9. have a start menu and an end card

Build approach:

40% build:

Build a fully functioning game in the Unity engine alongside a partially complete write-up of some of the game design principles involved

Specific game objectives to complete for this level:

1ai, 1aii, 1aiii, 1avii, 1bii, 2ai, 2aiv, 3, 5aiii, 7aiii, 7aiv, 7av, 8a, 8bi, 8bvii, 9ai, 9aii, 9aiii, 9avi, 9aviii, 9aix, 5av, 8bx

60% build:

Build a very well-rounded and enjoyable game incorporating most of the game design principles

Specific game objectives to complete for this level:

1aiv, 1av, 1avi, 1aix, 2aii, 2av, 4ai, 4aii, 4aiii, 4aiv, 4av, 5ai, 6ai, 6aii, 7ai, 7avi, 8biii, 8biv, 8bix, 9aiv, 2aiii, 6bi

80% build:

Incorporate at least 10-15 game design principles and build a very clean and enjoyable game alongside a comprehensive write-up of the principles used.

Specific game objectives to complete for this level:

1aviii, 1bi, 5aii, 5aiv, 6bii, 7aii, 8biii, 8bv, 8bvi, 8bviii, 9av, 9vii,

Plan:

Objectives for the base game:

Define what the game will be about and what it will look like

Create a player and implement controls and animations to the player

Create the world around the player split into 3 distinct sections. Open world?

Each section should be designed to offer a unique playing experience to allow for a variety of design principles to be displayed

The first section should display good design pricniples for :

* Fgbvdsyh
* Dfvjsghaui
* Fdshuafh

The second section ..bngrfuid

The write up for the different design pricniples should be completed alongside implementation of each specific principle