Pills With Sunglasses

Game Design

Version 1.00

Author: Tim Horan

Date: November 27, 2018

Comments: Initial version

**Table of Contents**

1. Introduction ……………………………………………………………... 3
   1. Scope ………………………………………………....…………. 3
2. Target System …………………………………………………………… 3
3. Development System ……………………………………………………. 3
   1. Software ………………………………………………………… 3
4. Specification …………………………………………………………….. 4
   1. Concept …………………………………………………………. 4
   2. Game Structure …………………………………………………. 4
   3. Players …………………………………………………………... 4
   4. Action …………………………………………………………… 4
   5. Objective ………………………………………………………... 5
   6. Graphics ………………………………………………………… 5
5. Gameplay ………………………………………………………….…….. 6
   1. Controls …………………………………………………………. 6
   2. Physics ………………………………………………………….. 7
6. Front End ………………………………………………………………... 7
   1. Menus …………………………………………………………… 7
   2. Endgame Screen ………………………………………………… 8
7. Development Tools ……………………………………………………… 8
   1. Editor ……………………………………………………………. 8
8. Time ……………………………………………………………………... 8

**1. Introduction**

This document specifies a design for the gameplay of a game with the provisional title “Pills With Sunglasses”. It has been in development since 10/27/2018 and began as an addition to Unity’s [Networking Tutorial](https://unity3d.com/learn/tutorials/s/multiplayer-networking).

* 1. **Scope**

This document is intended to be read by programmers, artists and producers involved in the design, implementation and testing of Pills With Sunglasses.

**2. Target System**

Pills With Sunglasses will be produced for the following platforms: Windows PCs and Macs. This document is primarily concerned with the PC version. The game will be available through digital download only. It will not be graphics-intensive so that low-spec systems can run it easily.

**3. Development System**

Pills With Sunglasses will use the Unity Engine as an overhead. It will be developed using Unity version 2018.2.14f1 and Visual Studio 2017.

**4. Specification**

**4.1 Concept**

The aim of Pills With Sunglasses is to produce a fun, addictive, and smooth arena shooter game which utilizes simple graphics.

**4.2 Game Structure**

There will be multiple levels, each with a different theme and graphic style (eg. Mountains/hills, castle, farm, sci-fi). Each map will be small enough to make matches fast paced and entertaining. By limiting the scope of each map, players will never have to walk far to find another player. Each map will support all game modes available.

**4.3 Players**

The PC game will be playable by multiple players across the internet or on a LAN network. There will be no single player component to the game, it is online only.

**4.4 Action**

Players will be able to move in 3D space and jump a short distance. Each person will spawn with just a pistol and can pick up more powerful weapons throughout the map. Once a picked up weapon runs out of ammo, it is destroyed and the player goes back to their pistol. There will also be health pickups spread out across the map and will be the only method of healing in the game. Upon death, the camera will zoom out to a 3rd person view for a few seconds as the player ragdolls and then they will respawn at one of the many spawn points.

**4.4.1 Weapons**

* Pistol – 16 round magazine, unlimited ammo, 20 damage
* M4 – 30 round magazine, 30 damage
* Shotgun – 10 shots, one shot range ~ 5m
* Grenade Launcher – 3 grenades that explode on impact, blast radius ~ 5m
* Laser Rifle – 5 seconds of total use, unlimited range, 100 damage/second
* Rocket Launcher – 3 rockets that fly straight, blast radius ~ 3m
* Photon Cannon – 5 shots, blast radius ~ 2m

**4.5 Objective**

The objective of the game will vary depending on the game type. The player can choose to play any one of three game types:

**4.5.1 Free For All**

There are no teams, up to 6 players are in a race to be the first to amass 15 kills. Once this limit is reached by one person, the game is over and they are the winner of the match.

**4.5.2 Team Deathmatch**

There are two teams, red and blue. Teams must be even and there can be no more than 3 people per team. Players will be colored the same as their team color so they can tell friends from enemies. Friendly fire will be disabled. The first team to reach 30 kills total is the winner. Respawns are random to prevent spawn killing.

**4.5.3 King Of The Hill**

There will be a central point of the map that must be controlled by two teams. Teams will be comprised exactly the same way as in the Team Deathmatch mode. In order to win the game, one team must control the “hill” for a total of 45 seconds. Time is only added when someone from a team is in contact with the area and there are no enemy players also in contact with the area. There are no limits on number of respawns allowed.

**4.6 Graphics**

The map and everything in it will be viewed in a 1st person view for most of the time. The only time a 3rd person camera will be used is for a few short seconds after a player is killed. The field of view will be set to 60 for each player and the game is intended to be played in a resolution of 1920x1080.

**4.6.1 Objects**

* Players -- will be represented by a simple capsule with a cube in it’s head to look like sunglasses. They will not be animated in any way but can rotate around the Y axis while alive and will rotate around all axes when dead and ragdolling
* Weapons – prefabs will be used from assets found on the Unity Asset store
* Health pickups – prefabs will be made by myself using simple 3D shapes and materials
* Maps – some maps will be taken from the Unity Asset Store and other will be created by myself using the terrain editor or other imported assets

**4.6.2 HUD**

* Health – located in the bottom left corner
* Ammo – located above the health display

**4.6.3 Popups**

* “Press E to pick up weapon” when near a spawned special weapon
* Scoreboard will be shown when pressing the Tab key
* Pressing escape will bring up a menu with options to resume or quit to the main menu

**5. Gameplay**

**5.1 Controls**

* ‘w’ – move forward
* ‘s’ – move backward
* ‘a’ – move left
* ‘d’ – move right
* ‘space’ – jump (if in contact with the ground)
* ‘e’ – pickup weapon
* ‘r’ – reload pistol
* ‘left mouse button’ – shoot
* ‘mouse’ – aim

**5.2 Physics**

Gravity will be used in this game, simulated by Unity’s Rigidbody component. Weapons that use ray-casting to fire (pistol, M4, shotgun, laser rifle) will not have bullet drop. The rocket launcher and photon cannon weapons will fire projectiles that are not affected by gravity. The grenade launcher’s projectiles will arc with the pull of gravity. The grenades will fire further depending on how long the player charges the shot.

**6. Front End**

**6.1 Menus**

* Main Menu – The menu will first ask the user to pick a screen name for themselves. Then there will be several options: Create Lobby, Find Lobby, and Exit. For both the Create Lobby and Find Lobby options, the user will be asked to pick which game mode they want to play. They can then either name their created lobby or search all lobbies of that match type for an open spot.
* Lobby – A list of all players will be displayed and their “ready” status. Players will have a button to ready up and can cancel it with the same button.
* In-Game Menu – Two options: Resume or Quit where quit will take them to the main menu
* Scoreboard – Displays the screen name for each player and their number of kills and deaths, as well as their team (if playing team deathmatch or king of the hill) number of kills or capture time.

**6.2 Endgame Screen**

Once the game is over, there will be a pop up screen that displays the name and stats of the winner or winning team. A button will be available to show everyone’s stats if the user desires to view that. There will be an exit button that returns the player back to the lobby. A time limit of 30 seconds will be implemented, after which everyone still in the game is returned to the lobby.

**7. Development Tools**

**7.1 Editor**

The editor used for Pills With Sunglasses will be the Unity Engine, which allows assets to be placed, rotated, and edited in the environment easily. Each map will be a separate scene.

**8. Time**

Official Start Date : October 27, 2018

Complete Game Design : November 27, 2018

Milestone 1 – Alpha : December 4, 2018

End of Project : December 13, 2018