Ship Shooter
Game Design Document

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1.0 Introduction

This document serves to detail the designs of a game called "Ship Shooter."

2.0 Specifications

2.1 Concept

Ship Shooter is a top-down view shooting game. The player must fight his or her way through aerial combat, firing lasers at opponent airships, all while dodging their attacks.

2.2 Game Structure

The game is played on a standstill camera with a scrolling background. The background will be science fiction themed and may be planetary land or cities below. The ships and laser attacks are also science fiction themed.

2.3 Players

This game is intended to be played by one player on a standalone machine.

2.4 Action

The player will control his or her own airship to fight against the enemy horde. The player's primary attack is a rapid double-laser fire. Since there may be too many lasers on screen from enemies to avoid at certain times, the player has the abilities to dodge and be given invincibility frames for about one second. The downside to this is that the player cannot shoot while the shield is active.

2.5 Objective

The objective of this game is to fight your way out of the enemy ambush. The player will need to survive until the end of the level. Once the end is reached, the player's score is calculated base on how many enemy aircrafts were destroyed and how much damage was avoided.

2.6 Graphics

Graphics are designed using Blender. Minimal animation will be used, if at all. There may be some animation for the dodging mechanism used by the player's airship or some other effect.
The background will be moving and will be 3d so that there is depth.

There will be a HUD on screen indicating the player's score and health as well as the level and wave count.

3.0 Target System

Ship Shooter will be playable on PC and also exported as a WebGL build.

4.0 Development System

This game will be developed using Unity and C#.

5.0 Gameplay

5.1 World
The game is science fiction themed and will be set in space. The primary setting is in the middle of space with galaxy backgrounds.

5.2 Enemy Ships
The enemy ships will be spawned outside of the camera view and then fly in from the top of the screen. These airships will be deployed automatically on a timed basis. There will be 6 waves per level. The waves will progress in difficulty. Some waves may come sooner, causing an overlapping effect. Each ship will also have its own unique firing attack. This is explained in more detail below.

5.2.1 Ship Types
The difficulty is rated on a basis of 5 stars, with 5 being the most difficult.

Grunt
- Difficulty - ★
- Attacks - The grunt ship will rotate while firing a ray-cast laser. The rotation speed may vary.

Seeker
- Difficulty - ★★★
- These ships have more health than grunts.
- Attacks - This ship will face the player and fire projectiles which cannot be destroyed. The speed of these attacks will increase in later levels

Multi-Fire Drone
- Difficulty - ★★★★
- You cannot destroy the projectiles from this ship. It has the most health of all ships.
- Attacks - This ship does not face the player like the others. Instead, it rotates in a clockwise motion while firing projectiles from multiple points. This creates a spiral like effect which has gaps in between the projectiles for the player to be able to avoid taking damage.

5.3 Controls
The game is played with a mouse and keyboard. The player's ship will rotate to face the mouse at all times. Basic left, right, up, and down movement is used with the WASD keys. The dodging mechanism is used by pressing the spacebar.

5.4 Player Specifications
The player begins with 100 health. Certain projectiles may do more damage to the player. These numbers will be determined after playtesting.

5.5 Other Game Objects
- Health Bubbles - Players can use health bubbles randomly spawned throughout the level to regain health.

5.6 Scoring
As previously mentioned, scoring is dependent on how many ships were destroyed. Since the same ships are spawned each round, they each reward a flat number of 100 points. Players must avoid taking damage in order to earn bonus points. The maximum number of bonus points players can receive is 1000 per round. Players are not docked if hit by grunt lasers. Potential bonus points are only lost if hit from a seeker or multi-firing ship attack. The player will be docked 100 bonus points when hit. For example, the player will only earn 500 bonus points if they were hit 5 times during the round.

A player's score is saved upon completion of the level, whether it is a win or loss. The player can keep retrying levels until they give up. This forces their points to be reset back to what they were at the beginning of the level if they lose. This way, points earned from a level where they lost are not counted. Their score is reset once back to the main menu.