# Design Document for:

# Space-ial Awareness

### The Ultimate Shoot 'Em Up

"Angry Alien Annihilation"

Friday, February 23, 2018

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# Game Overview

# Philosophy

## Philosophical point #1

This game is our take on the single player isometric shoot 'em up.  This was the first genre that we all thought of when we heard the theme of GamesFleadh this year.

## Philosophical point #2

Our game works on PCs, with a mouse and keyboard input. Early on we identified that this was the approach we wanted to take.

# Common Questions

## What is the game?

An isometric shoot 'em up set on a spaceship where your goal is to kill all the marines on board.

## Why create this game?

We were intrigued by the theme of GamesFleadh this year and thought an isometric shooter would be very fitting for it.

**Where does the game take place?**

Space-ial Awareness takes place on a spaceship the player has just boarded. It is inhabited by a large number of marines who you are tasked with eliminating.

**What do I control?**

You control an alien who has just boarded a spaceship, who has to kill everyone on board. You have the ability to rush an enemy to kill them, use a reflector shield on bullets and absorbe a downed enemy's energy to boost your health.

**What is the main focus?**

Your focus is to save the ship from all the marines on board before they destroy it.

**What's different?**

The focus of the game was to force the player to be aggressive and continuously in combat, without just flooding the screen with enemies. As such even the defensive abilities has an aggressive flavor to it, and constantly forces the player to get into the fray. We also wanted to focus on random map generation as well, to keep the play area fresh and new.

# Feature Set

## General Features

Huge levels

Adaptive AI
3D graphics
Randomly Generating Maps

## Gameplay

Randomly Generating Maps

Aggressive AI
Player Abilities
Intuitive Controls

# The Game World

## Overview

"Space-ial Awareness" takes place on a dark, randomly generating spaceship you have been tasked with saving. In order to save it you need to kill the marines on board.

## Randomly Generated Levels

Our levels are generated randomly each time you load a level, which creates replayability as no playthrough will be the same. Each level begins in the same main rooms, which are surrounded by a randomly generated maze ,including dead ends, each time. This provides more escape routes for the PC, but also more flanking routes for the AI.

## Walls Becoming See-Through

As our game is in an isometric view, we decided to add a feature where the walls around the player will become temporarily see-through, to help the players viewsight.

# The Physical World

## Overview

The game is set on a spaceship.

## Travel

The game employs the time tested "WASD" controls to move the player

## Objects

- Player

- Enemies
- Halls
- Corners
- Rooms

# Rendering System

As we created the game in unity, we used the Unity default rendering system when creating "Space-ial Awareness".

# Camera

"Space-ial Awareness" has an isometric camera view, and it also has a top down minimap view

# Game Engine

## Overview

We used the Unity engine to create this game.

## Collision Detection

We created a custom collision detection system based on Unity capsules. This was important for both the shooting and the charging of enemies.

# Lighting Models

## Overview

We decided to have a low level lighting system to limit the user's field of view.

## Lighting Filter

There is a lighting filter on the scene to limit the view of the players in the corners of the screen.

## Dark Game World

The game world is dark as well as the lighting, creating a sense of unfamiliarity to the player.

# The World Layout

## Overview

The world is randomly generated each time. The inspiration for the code came from Richard Hawkes YouTube video, found here: https://youtu.be/UeIWxygnc-E While this was the inspiration for the code, we had to change a good deal of it to make it work for our purposes.

## Room Design & Layout

We wanted to have random maps from the very beginning, as it's not only technically difficult, but helps keep the game somewhat fresh and interesting. After trying to design a system on our own that was slow to progress, we eventually looked to see how others did it. The tutorial was meant for FPS in a cave, so we had to adjust that for an isometric view on a space station.

# Game Characters

## Overview

The enemies of "Space-ial Awareness" are the marines who inhabit the spaceship. As you complete each level, their get smarter and employ different tactics.

## Enemies

The marines on board are trying the revolt and destroy the ship they are on, and you have come in to stop them. They will track and shoot you on sight, and will have adaptive tactics in later levels, such as hunting in squads and reviving enemies.

# User Interface

## Overview

We tried to have a very minimalistic User Interface so the user can concentrate mostly on the game

## Mini Map

Our game includes a mini map which displays the map of the game world, the player's position and the position of any enemy.

# Weapons

## Overview

There is only one weapon the user can use in Space-ial Awareness, but you have multiple abilities that are designed to be used together in quick succession.

### The Gun

You can fire your gun with the left mouse button. It's linked to each individual press of the left mouse button, as the animation/sounds weren't always lining up if they player was holding down the left button. The shooting is handled by raycasting from alternating hands of the main player.  It takes 3 shots to down an enemy. Downed enemies can be revived by their squadmates (on later waves), absorbed for health, or charged for aoe damage and energy (ammo) refill.

### Reflector Shield

With a press of the middle mouse button, the user's character uses their reflector shield, which can reflect bullets back towards enemies. Upon being repulsed, the enemies bullets can now inflict damage to the enemies. This is the player's only defensive ability, and we wanted to keep to the core concept of all the abilities should be aggressive.

### Enemy Charge

When aiming at an enemy, if you press the right mouse button you will charge the enemy and kill them, as well as recharging the player's energy (ammo). This will only activate if the raycast detects an enemy player, but on a failed raycast it doesn't activate the ability and cooldown. If the player charges a downed enemy, it causes massive aoe damage, which is a great combination of downing an enemy, charge in on the downed enemy, absorb their health, and activate the repulsion shield  to keep alive along the way. The player does lose the ability to move or shoot while charging.

### Health Absorb

To regain health, you press the spacebar while near a downed enemy. The player gains health based on each downed enemy in the area around the player. The player can heal past their default health, up to a maximum of two times the player's default health. If the player heals past their default health, they will slowly lose health as the game progresses.

# Musical Scores and Sound Effects
## Overview

The sound effects e.g gun fire, alarm were all sorted from sound libraries, the main menu music and the game combat music are original pieces composed by Václav Tvrdek. The ready dialog at the beginning of the game was an audio recording by Eric Lambert.

# Game Experience

The user controls an alien tasked with killing all humans on board the ship because they destroyed our world. Due to time constraints we were unable to add the story elements we hoped to.

## Victory Conditions

Victory is achieved by killing all enemies on each floor, which will become more difficult on each new level.

# Character Rendering

As with the rendering system, the Unity default rendering system is used to render characters.