Developer Diary
Mobile Applications Development 2 SWY3
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Introduction

This document shows changes I have made from my initial design document throughout my implementation. It also documents any major problems I have encountered and how I solved them. I also outline any standing issues I have in my game and references to assets, tutorials and sound sources.

Changes from Design Document

The only changes from my initial design document to my current game is I only have 4 waves implemented instead of 10. The main reason for this was for demonstration purposes, overall simplicity and for testing purposes as I had not left myself a lot of time to code my game. It would be easy to implement more waves in the future if I had more time. Other than adding more unique power-ups and enemies I felt I have achieved what I had documented in my design brief.

Problems I've encountered

One of the first problems I had encountered was implementing a music volume slider to my pause menu. I wanted to implement this because I felt the player might preference having a lower music volume as I had intentionally made it quite loud. I did not know how to go about changing the volume mixer and after doing some research I found this YouTube tutorial on a UI volume slider. The video was short, straight to the point and easy to follow.

Another issue I faced while I was working on coding power-ups for the player, I wanted to implement an invulnerability power-up but had no idea how to go about that. I found this YouTube tutorial on temporary invulnerability and I implemented it into my game, however after testing I realized the player was unable to destroy enemies while invulnerable. So instead of using the invulnerability as a power-up I implemented it into my player behavior so when the player loses a life and respawns, they gain temporary invulnerability, so they wont instantly lose another life to an enemy.

Later on in development while coding my boss scene I wanted to implement a UI healthbar for the boss. I followed the moodle tutorial on the player health bar and tried using it for the boss, but I got a lot of errors. After doing research online I found this [YouTube tutorial](#) on implementing a health bar for the enemy boss, it was exactly what I wanted and was covered in the first 3 minutes of the tutorial.

Known bugs

There were many more problems I had encountered while developing my game, but I was unable to fix these problems, so below I have documented any persistent and known bugs in my game.

The biggest bug in my game would be the lives and score tracker, it works fine while running the game from the main menu and succeeding through each wave. However, if the player dies and goes back to the main menu, or if the player beats the game and goes back to the main menu, the lives and score are still tracked from the previous run. I think this is to do with singletons, I don't destroy the lives and score on each scene to track the progress throughout the game. But doing so I was unable to reset the lives and score on going back to the main menu, I was unable to fix this bug in time for the project upload.

Another issue in my game is if the player dies and was shooting in the same frame, the players bullets kept shooting while the player was dead and when the player respawns the bullets are still firing. I think this is to do with the bullet parent and when the player dies if the bullet parent is still active in the scene it will keep duplicating the players bullets. I tried to restructure my firing mechanism, but I encountered more issues in doing so.

The last large known bug I have in my game is to do with the players temporary invulnerability. If the player dies and the last bullet, they shot killed an enemy which totaled the score to the threshold to load the next wave, the player will be permanently invulnerable. This bug occurs rarely but is still a game breaking bug, I tried to turn off the invulnerably on changing scene, but I was unable to figure out the solution in time.

References

Below I have referenced any assets and sound files I have used in my game.

Synthwave Free sessions by [YOGURT AUDIO](#)

SynthWave Sci-Fi Music Pack by [ALAN DALCASTANGE DA CUNHA](#)

8-BIT Style Sound Effects by [CABLED_MESS](#)

Enemy Sprites by [MillionthVector](#)