Fighting Game with Online Play

Design Document

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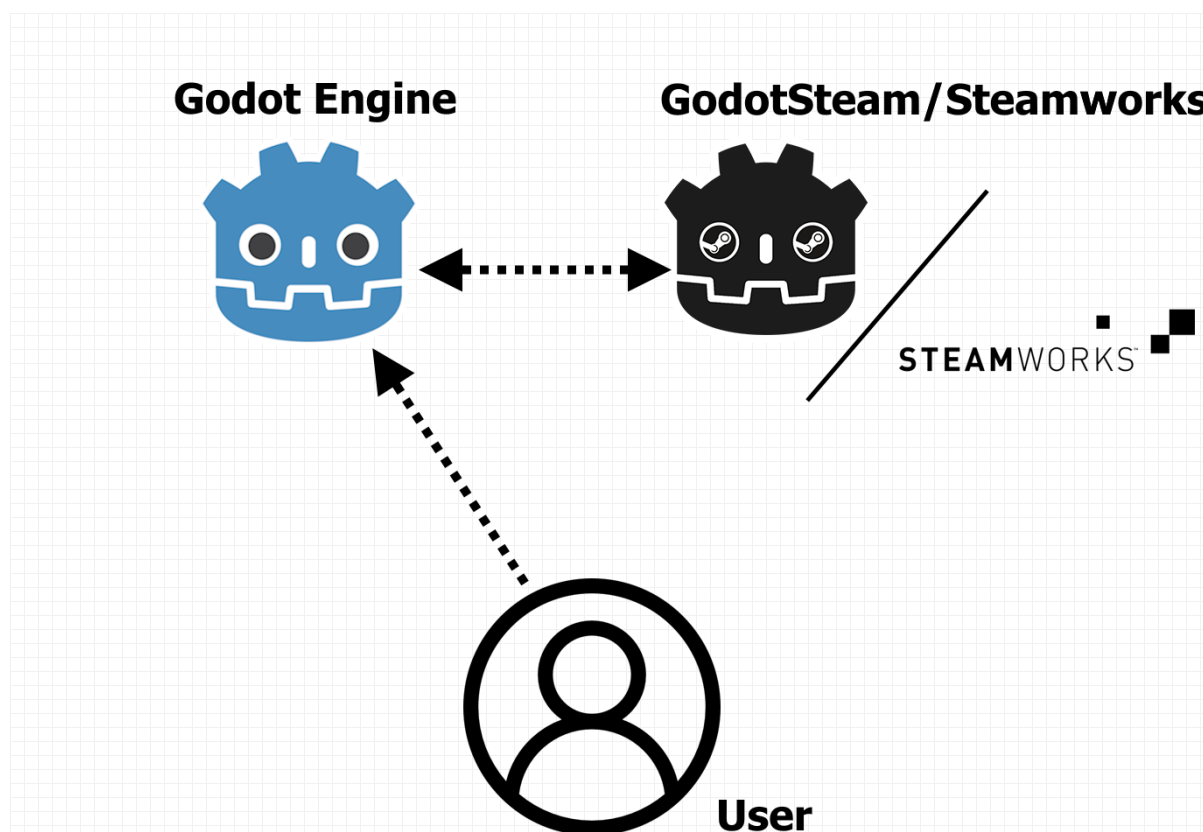**Date:** 14/02/2024

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Introduction

This documentation outlines the design requirements for developing a fighting game in the Godot Engine with online play.

System Architecture Diagram

The game will target Windows and be written in GDScript (Godot's scripting language). It will be developed in the Godot game engine, which also contains it's own IDE. As the game will be developed to be peer-to-peer, GodotSteam (which extends to Steamworks) provides a peer-to-peer matchmaking API to enable users to find other users to play a game with.

Tools & Technologies Used

Godot & GDScript
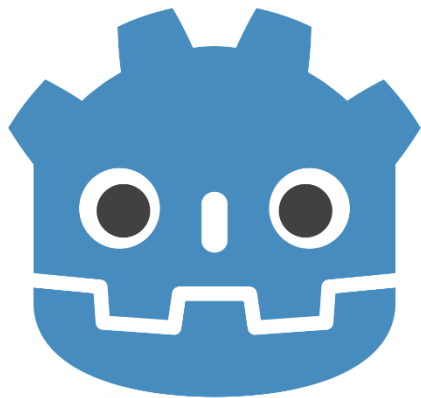
The Godot Engine is a free, open-source game engine that allows you to develop your own 2D & 3D games, cross-platform projects or XR ideas.

Games are developed in Godot via a 'scene-driven' design where you use building blocks called nodes to create your own scenes and add scripts (with GDScript as the scripting language) to them to customize their behavior.

Below is an example of the Godot script editor and GDScript syntax;
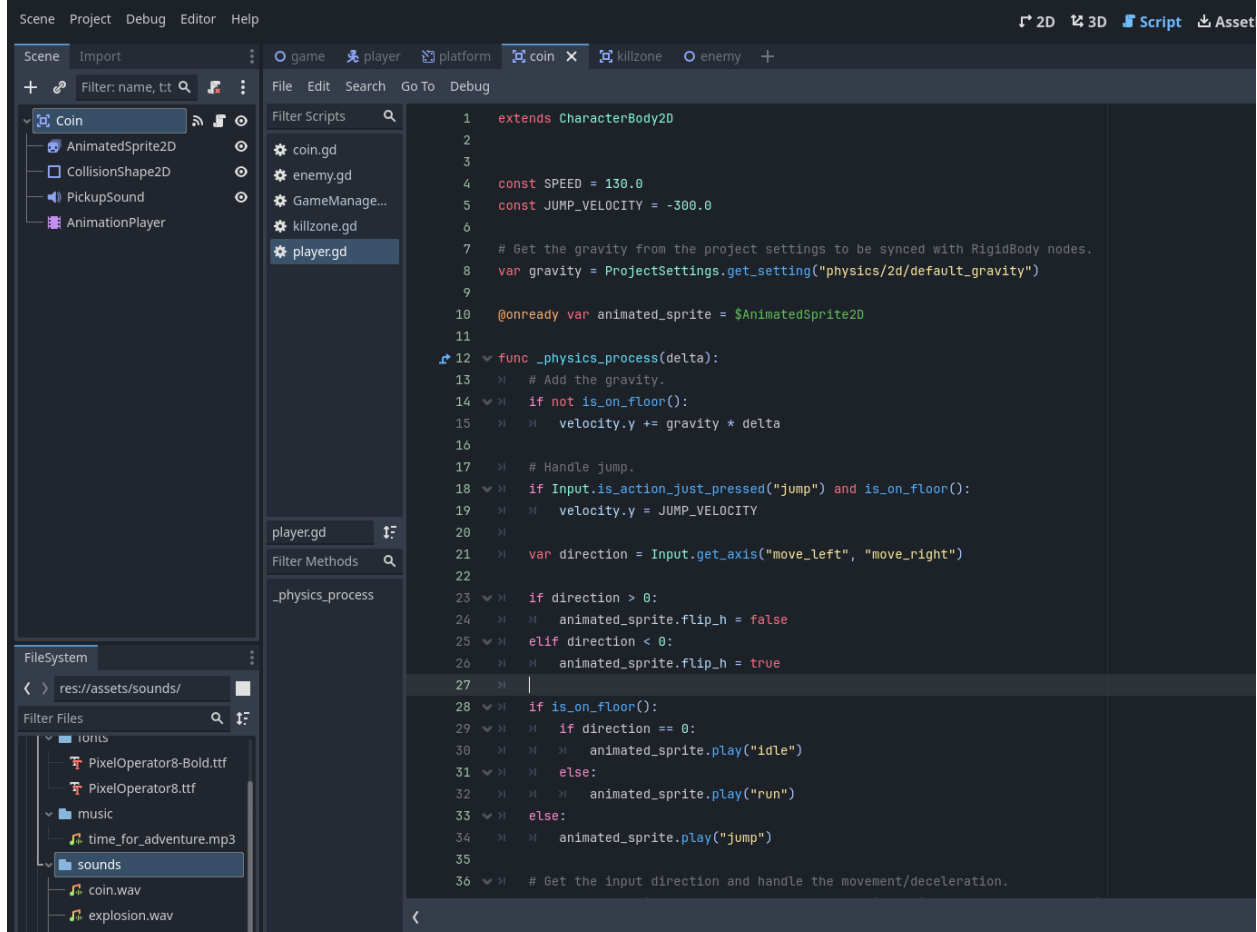
GodotSteam & Steamworks

GodotSteam provides a suite of tools for the Godot Engine via Steamworks. For our purposes, we're using the GodotSteam (and by extension, the Steamworks API) to utilize the peer-to-peer networking capabilities available and utilize their matchmaking & lobbies system to enable other users to challenge each other.
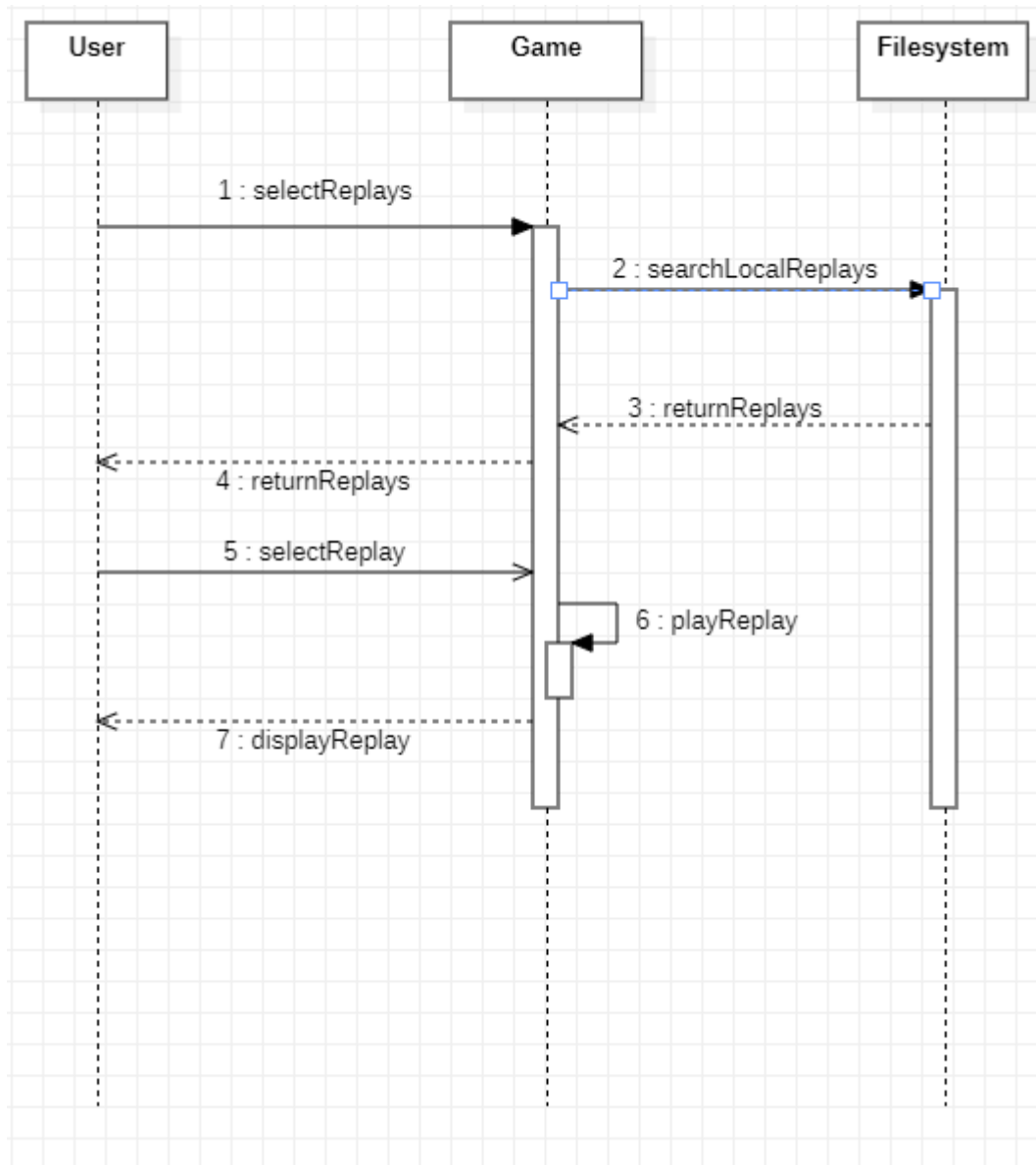
Sequence Diagrams

Sequence diagrams for important functionalities in this project are shown below.
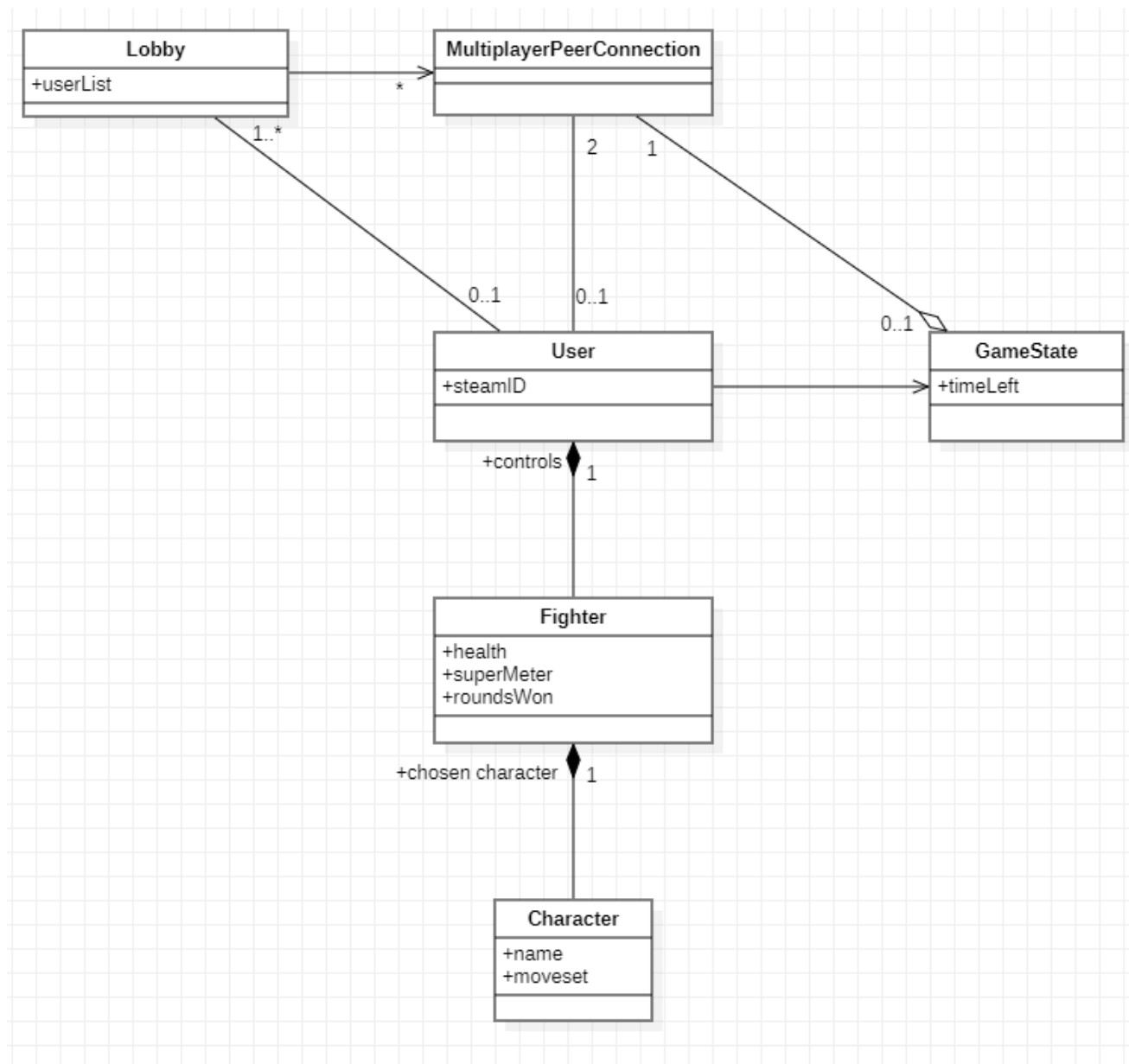
Connecting to a lobby/peer
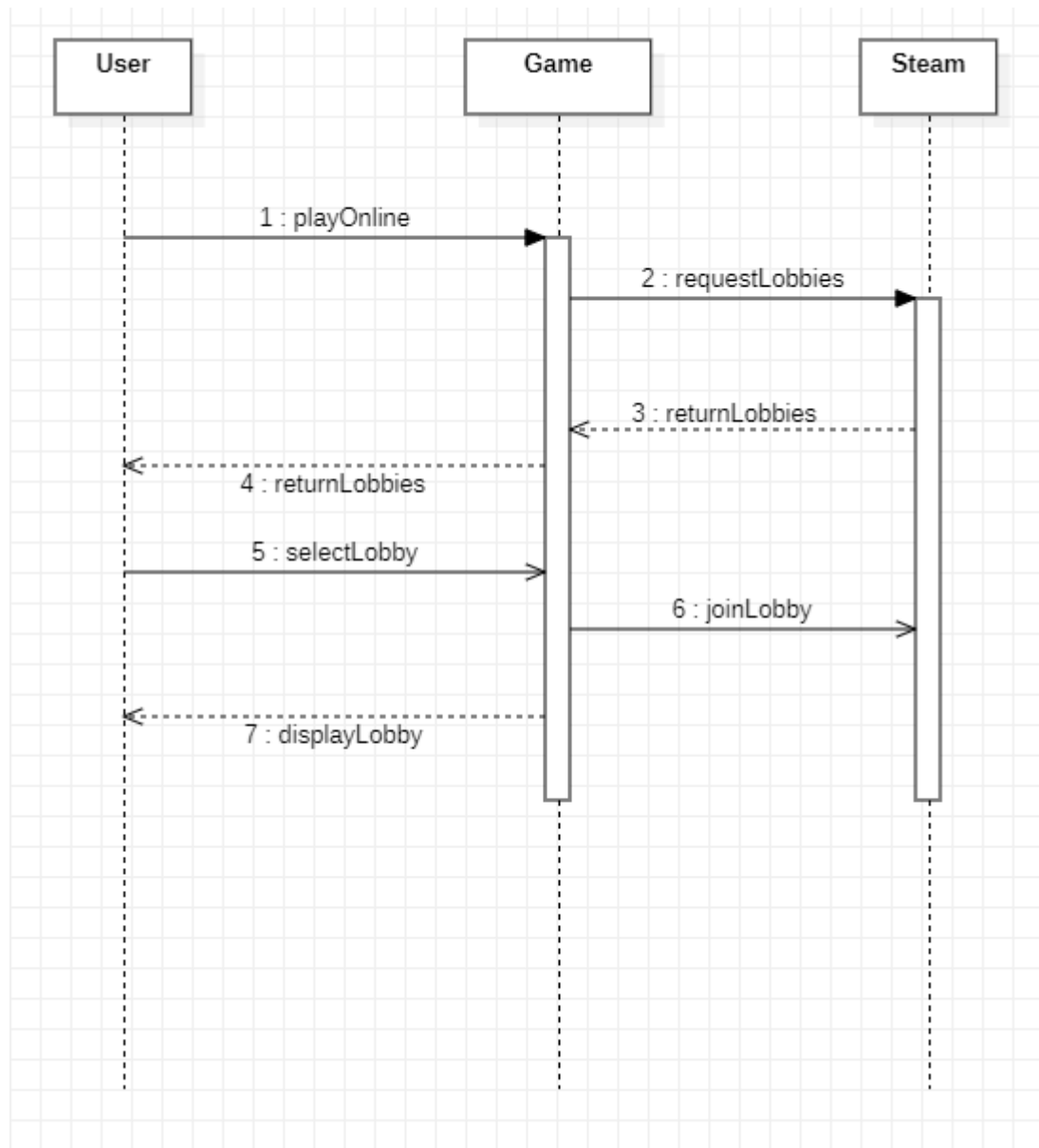
Viewing a replay

Class Diagram

UI/UX Design

Typically, a good user experience when it comes to fighting games is typically the gameplay itself however visual clarity in the game and an intuitive + usable application is important as well. New and familiar players should be able to easily navigate the menu.

An important detail in the UI is to be able to convey information and values to the player as simple as possible. They will have several bars/numerical values to look at during a round, such as their health bar, their super bar, how many rounds they've won, the round timer, etc. This allows a player to develop strategies mid-match and choose to be either aggressive or defensive. (Ketonen, 2016)

Prototype Screens

Main Menu
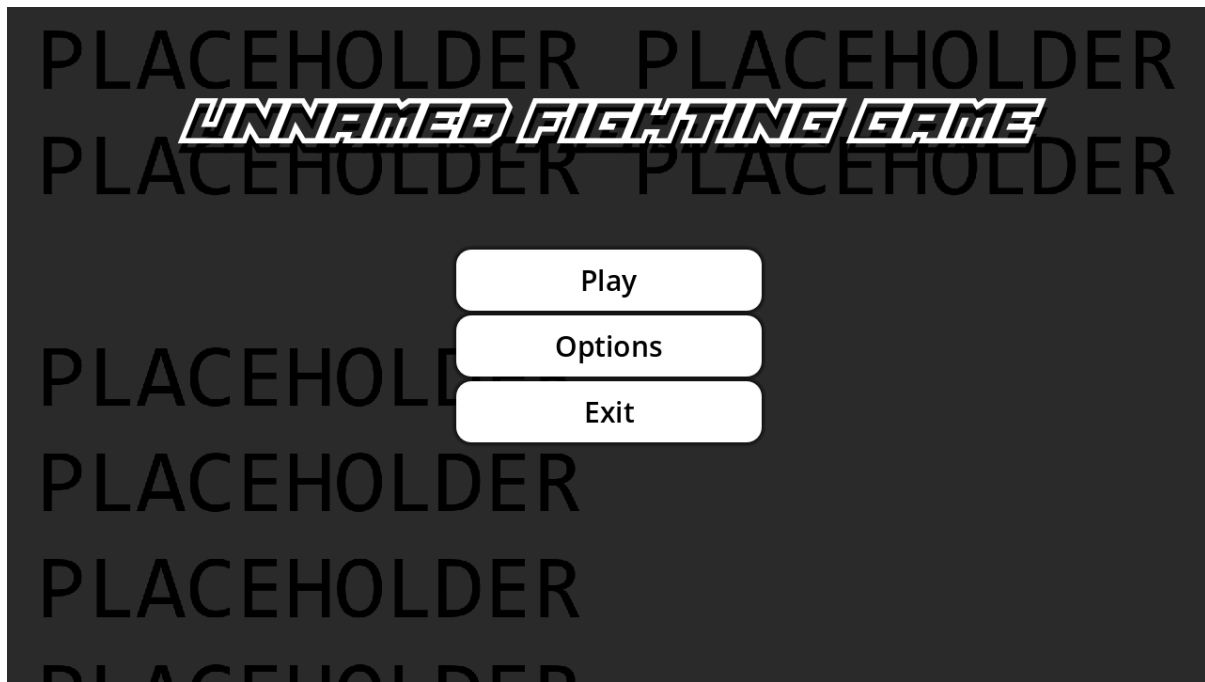
Game 'Arena'
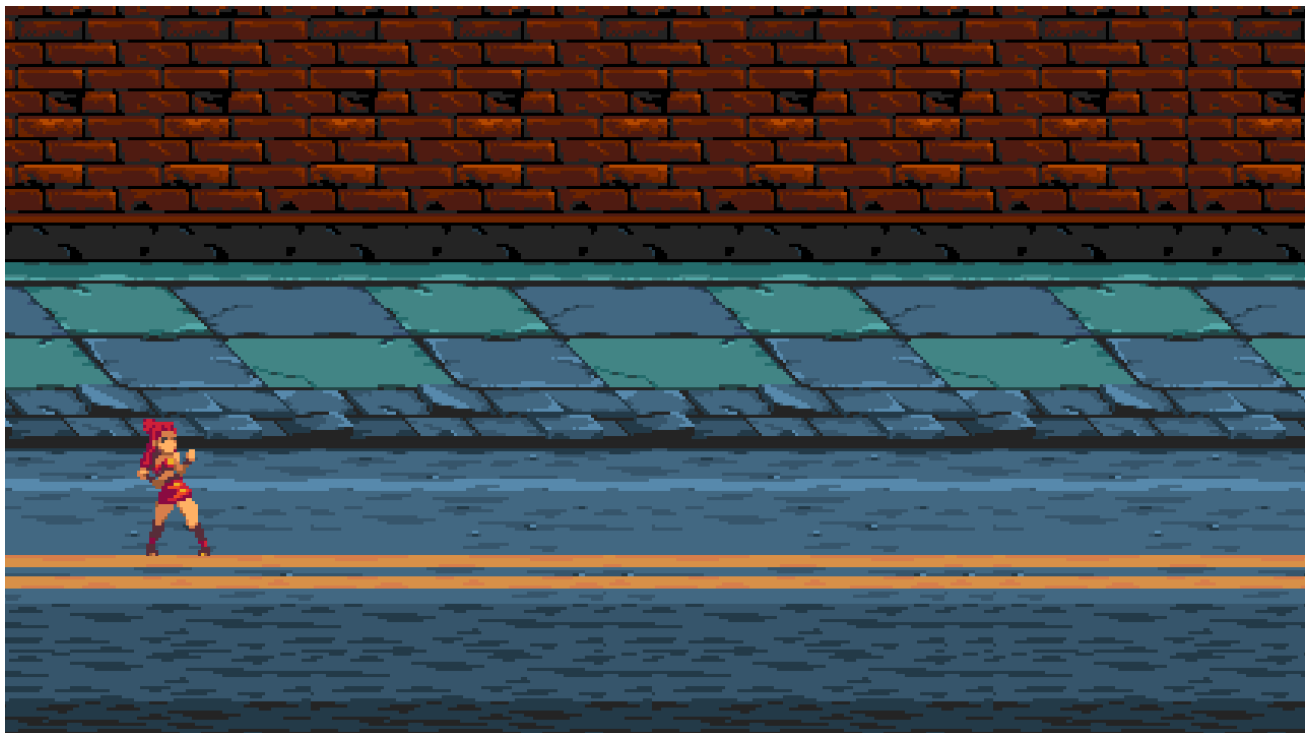
References

Ketonen, M. (2016). *Designing a 2D fighting game.* Kajaani.