31285 Mobile Applications Project

PLANET TANKS

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1 Introduction

Planet Tanks is a game where you control a tank and must seek out and destroy other tanks to complete beat the levels. The game will have a set of base levels however, there is also a level editor that players can use to create their own unique challenges. Planet Tanks is designed to provide a varying degree of gameplay difficulty allowing the player to have countless fun experiences as they get better.

1.1 Application Vision

This game idea is based off pre-existing games, namely Wii Play Tanks running on the Wii and Tank Hero which runs on Android. However, Planet Tanks will have an additional two base features, a level editor and traps. A level editor can be used to create and change game levels, allowing the players to customise their game experience. Many different games have this feature and it has been shown to increase the players own fun. Additionally, trap tiles that perform various effects on gameplay will be added. These traps will alter the games mechanics causing the player to change their strategy as they progress through the levels. An example of a trap tile would be a mud tile. These tiles will slow the player down making it harder for them to doge enemy projectiles.

1.2 Scope

Initial Scope:

- A top down 3D game where a player controls a tank
- 5 levels base that the player can play through and learn the mechanics
- 2 Enemy tanks that shoot and behave differently
- 3 trap tiles that have different effects on game mechanics
- A level selection screen
- A level editor that the player can use to edit pre-existing levels or create their own.
- Connection to Google's Play Games Services for leader board scoring
- Connection to Google's Play Games Services for in game achievements

Optional Items:

- Additional levels
- Additional enemy tanks
- Additional trap tiles
- Online map sharing using either google firebase
- Online multiplayer where players play against each other.
- Advertisement support

1.3 Document Version History

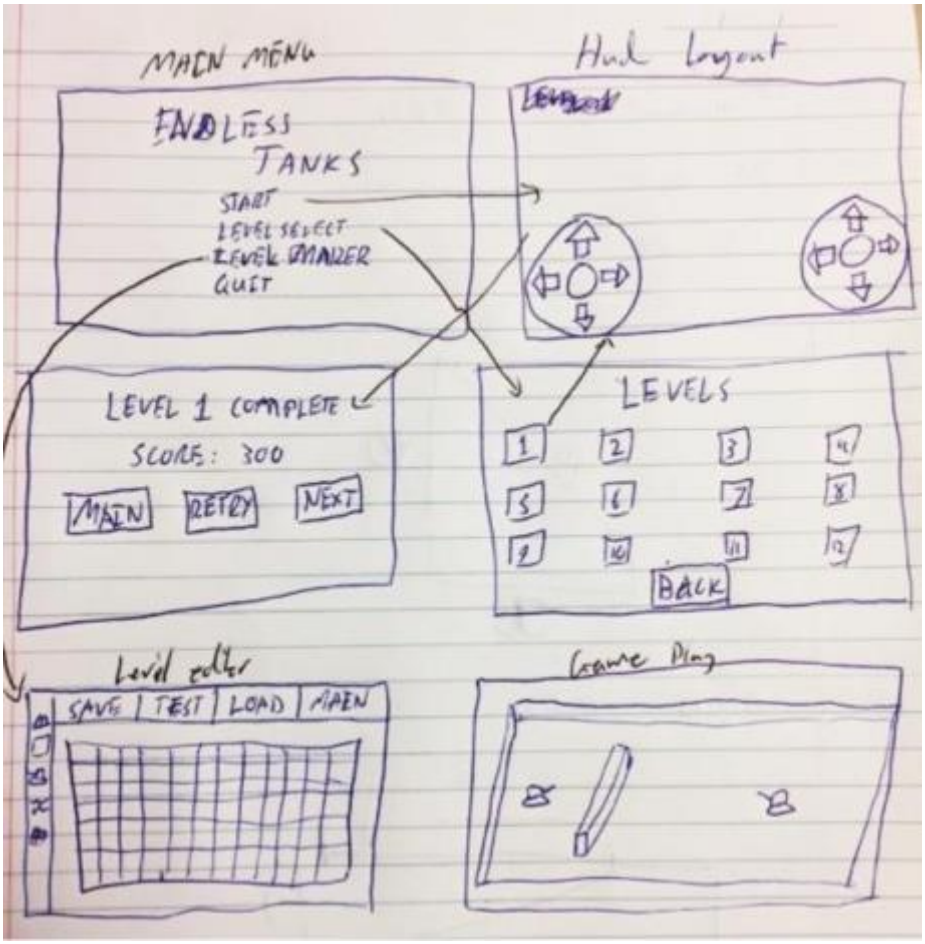
- Version 0.1:
  Contained a brief overview of the game idea, potential APIs for use and some simple wireframes.
- Version 0.5:
  This is the current version of the document.

2 Functionality Overview

2.1 Feature Summary

- A level selector:
  This feature allows a player to start from the latest level they played or any level they have previously unlocked.
- A interactive virtual control layout:
  This is a virtual layout of the joystick controls that the player must touch to interact with their tank.
- A playable game:
  A game where the player controls a tank and must defeat other tanks to progress. This will be the core part of the game where the player will spend most of their time.
- A level editor:
  Players will select the type of tile they want to place and then tap on a grid to paint them. This will then be exported into a map file that the game will be able to read. Additionally, the level editor will be able to load existing map files for editing

2.3 Application Flow Diagram



3 Design

3.1 Overall Components Overview

The base project will need only once activity to link to the game engine. This will later be converted into a fragment to allow interaction with additional API.

3.2 Mockups

3.3 Used Application Programming Interfaces

- libGDX game engine:
  The API is used to provide the base 3D game engine. It comes with rendering and audio programming allowing for quick implementation of games.

4 Application Structure

4.1 Packages

4.2 Activities

- Game stuffs:
  - Main menu screen:
  - Level selection screen:
  - Game play screen:
  - Game over screen:
  - Score and level complete screen:
  - Level editor screen:

4.3 Services

4.4 Others

5 Data Structure

6 Testing

7 Conclusion

8 References