**The floor is lava Technical Design Document**

**Description:**

This game will be a basic 3D platformer in which the player must get to the end of the platforms without falling into the lava. The camera will be in third person and the player will have a custom model (made by me). The lava will be a simple red plane that will slowly raise and if the player touches it, they lose and must restart.

**GUI:**

The game will be targeted towards PC and Android platforms.

On PC, the game will have a GUI which is composed of simple on-screen instructions on how to move your character and what to do.

On android, the game will have a GUI which is composed of buttons to move your character, as well as how to move your character and what to do.

PC mock-up

Diagram

Description automatically generated

Android mock-up

A picture containing diagram

Description automatically generated

**Controls:**

Different controls must be provided for the pc and android platforms respectively.

PC controls can simply be keyboard based, with arrow keys and space bar for jumping and moving.

However, Android requires use of the screen and tapping for movement, so there must be some on-screen areas to press in order to move the character. GUI visual representations of these areas will allow the user to know where to press.

The on-screen instructions will guide the user how to play on their current platform.

**API or software version requirements:**

For PC: A graphics API of Direct3D 9 or higher is required.

For Android: Android API version 19 or higher is required.

**Deployment Methods:**

Deployment to the different platforms will be completed using Unity’s built in tools for multi-platform deployment.

For PC, An installer will be created for easy installation on windows platforms.

**Platform Specific Constraints:**

For the PC platform, there are not many constraints to consider. PC is very flexible, has many methods of input and generally has generous system capabilities.

Android, however, Is very restrictive in in terms of controls and system capabilities. Controls are restricted to screen presses and sometimes device tilting. Android devices typically only have at most a couple gigabytes of ram, sometimes mere megabytes. And the device rendering capabilities is quite low compared to that of the PC.

These differences will be taken into consideration when creating the game.

**Industry standard API’s and methods of cross-platform development to be used:**

Cross-platform development is completed in Unity with Unity’s built-in methods.

The PC graphical API and Android API are included in development using Unity for those platforms.

**Game technology environmental considerations:**

For PC: Due to the flexibility of PC’s, there are very few environmental considerations apart from:

-Screen resolution

-Aspect Ratio

-Accessibility

-Minimum system requirements

For Android there are more restrictions and variables in user input. The following should be considered:

-Screen resolution

-Aspect Ratio

-Accessibility

-Minimum system requirements

-Screen rotation

-Touch input

Discussion topics

-Android input (How to implement on screen buttons for touch) https://answers.unity.com/questions/1226851/addlistener-to-onpointerdown-of-button-instead-of.html

-UI Anchoring

-Potential visual improvements (Lava particles, UI component visibility i.e text contrast backgrounds)