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# GAME DESIGN DOCUMENT

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## Concept Summary



“The Floor is Lava” is an eyesometric hypercasual platformer where the player controls a skeleton trying to escape an abandoned mineshaft filled with lava.

It was developed for PC and Mac, however a mobile version is a more ideal release as that platform contains the majority of the hypercasual demographic.

Its unique selling proposition is the “slow down” mechanic which progresses in the form of a feedback loop which will be discussed later.

## Version History

### Alpha:

Vs 0.1 – Basic Geometry and Movement

Vs 0.2 - Materials/Textures

Vs 0.3 – Added Lighting

### Beta:

Vs 1.0 – Added Jumpforce Feedback loop+ reset+ RNG

Vs 1.1- Added Sound effects+ music+ said scripts

Vs 1.2- Added basic UI

Vs 1.3 – Fixed UI score when resetting

Vs 1.4 – Fixed collision glitches (as per feedback)

Vs 1.5 – Fixed camera angle and Varied platform's sizes more  
(as per feedback)

### Release:

Vs 1.0 – Added skeletal animation + particle effects

VS 1.1 – Fixed platform values not randomly generating after  
successful completion.

# Game Functionality

# Rules

## Constitutive Rules:

```
public void OnCollisionEnter(Collision collision)
{
    if (collision.gameObject.layer == LayerMask.NameToLayer("Ground"))
    {
        Grounded = true;
    }

    if (collision.gameObject.CompareTag("Platform"))
    {
        MovingPlatform.SpeedModifier = 0;
        CurrentJumpforce+= 2*(temppoints);
        FindObjectOfType<ScoreManager>().IncrementScore(points);
    }
}

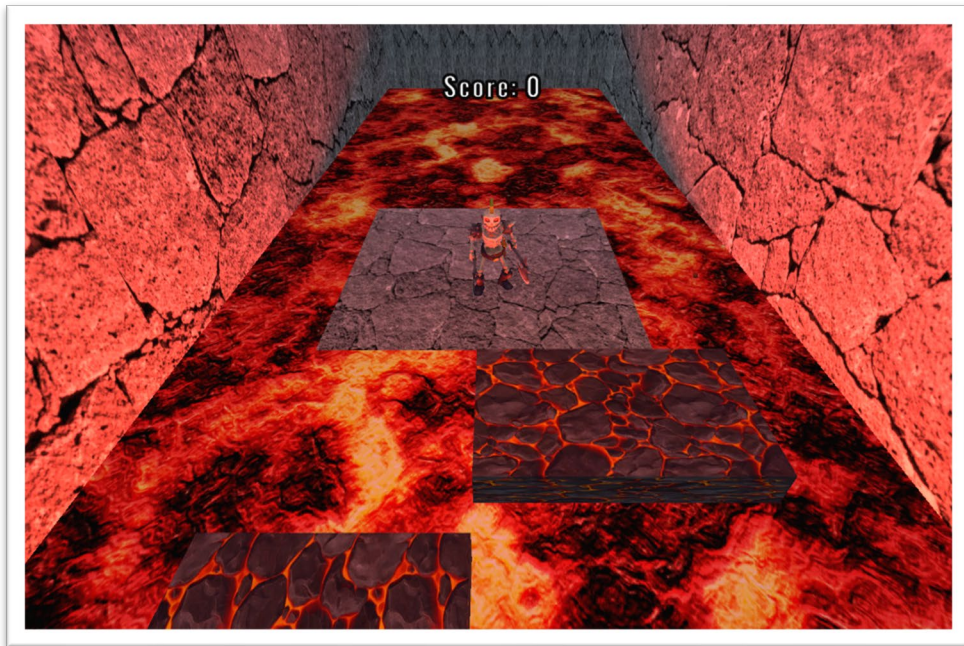
0 references
private void OnCollisionExit(Collision collision)
{
    if (collision.gameObject.layer == LayerMask.NameToLayer("Ground"))
    {
        Grounded = false;
    }

    if (collision.gameObject.CompareTag("Platform"))
    {
        MovingPlatform.SpeedModifier = -5*temppoints;
        currentSpeed-= 0.5f*temppoints;
    }
}
```

- The player can move up, down, left and right.
- The player can jump which depends on the jumpforce variable. This jumpforce also increases with every successful land on a platform. (alongside the score)
- If the player stays on a platform longer than 3 seconds, it will fall down.

- If the player lands in the lava, he will die and the game will reset alongside the score.
- If the jumps, the platforms move at a slower pace and the player's movement speed also slows down in air (this slow down increases as the level progresses)

## Operational rules:



- The player can move freely at all times, whether on a platform or in mid air.
- Players can land on the platform, increasing their score.
- The player must act swiftly as the platforms crumble after 3 seconds which sends them plummeting toward the lava.
- The level ends when reaching the golden platform, this sends them to a new level whilst keeping their score.
- The player must not fall into the lava, as this resets the game along with their score



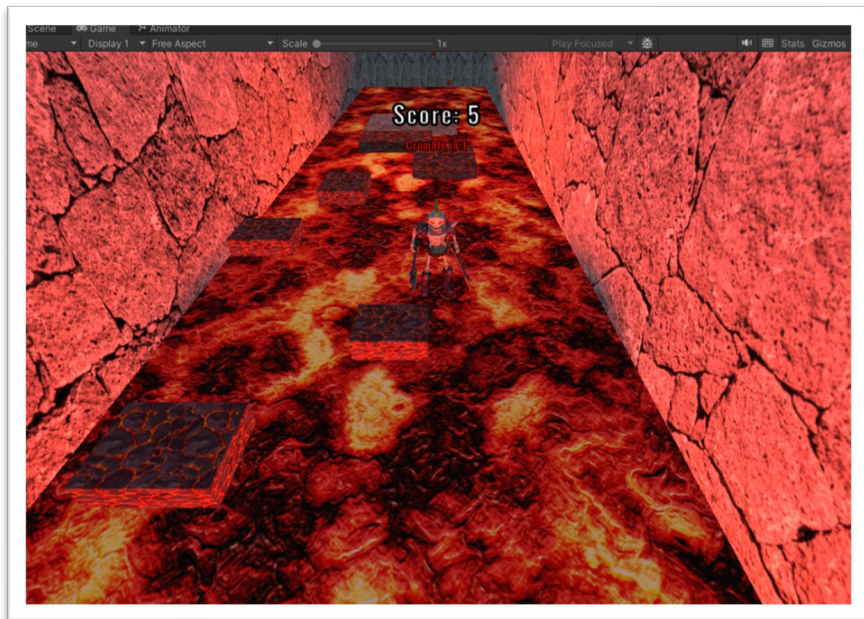
## Objectives

The primary objective for this game is to get the highest score possible.

To achieve this score, the player must successfully land on as many platforms as possible throughout the randomly generated levels.

There exists a secondary objective of getting to the end of each level, this is beneficial as once the player completes a level, their movement speed is reset back to their original high values and the levels begin as normal again.

## Progression of Game



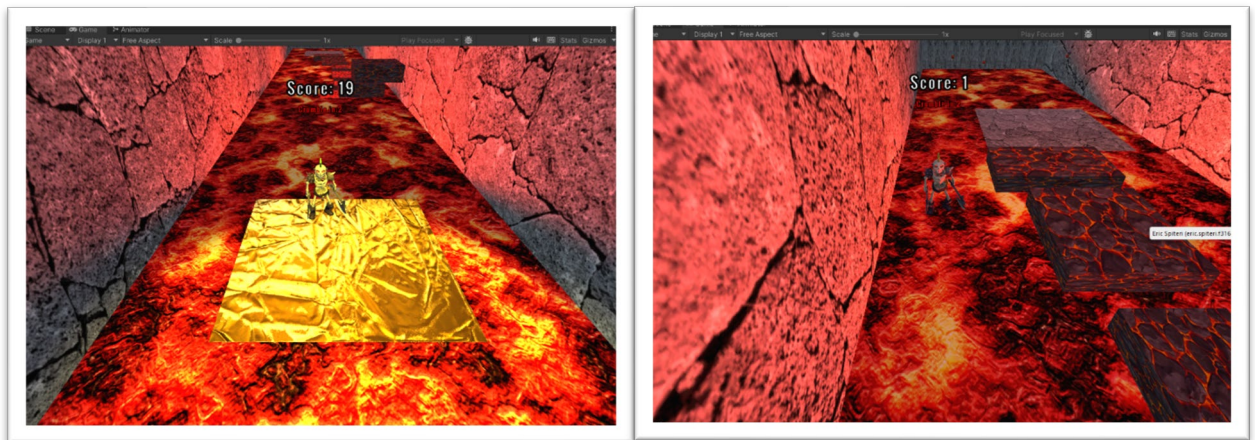
The player jumps from platform to platform, with each land incrementing the score. This happens until the player reaches a golden platform.

With every jump, the jumpforce is increases slightly, however his movement speed is also decreased slightly, making the player consider how he jumps as the level progresses.

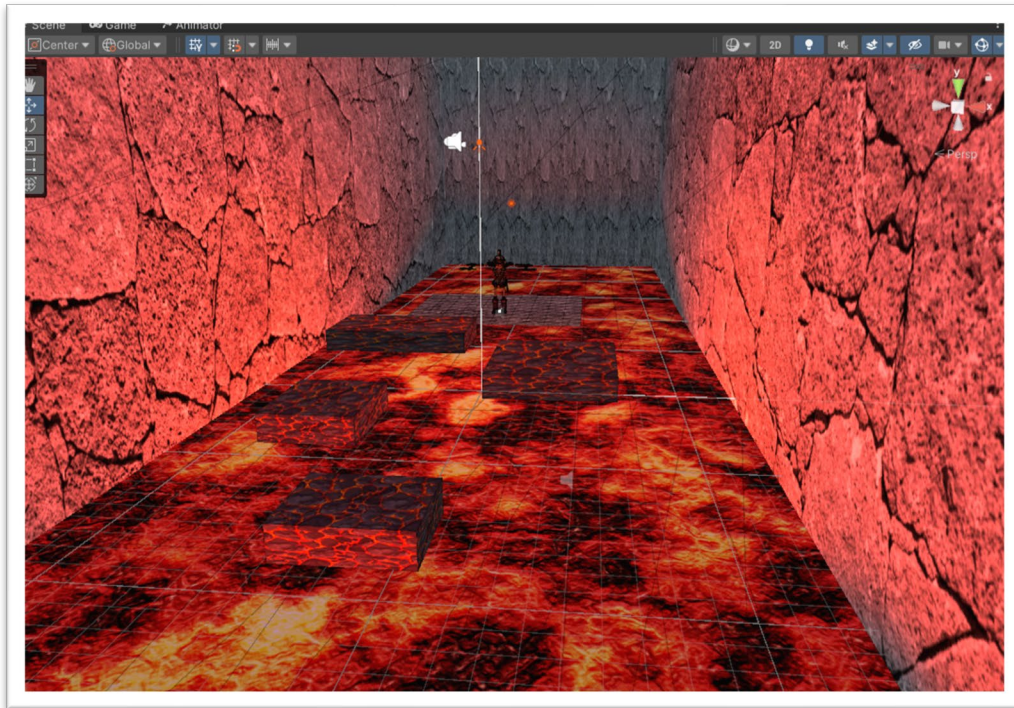
This golden platform sends the player to a new randomly generated level, allowing him to add to his score.

## Outcomes

During each level, the player will either successfully navigate through the moving platforms and move on to the next level or else will fall through the lava and die, thus resetting the game as well as their score.



# System Dynamics

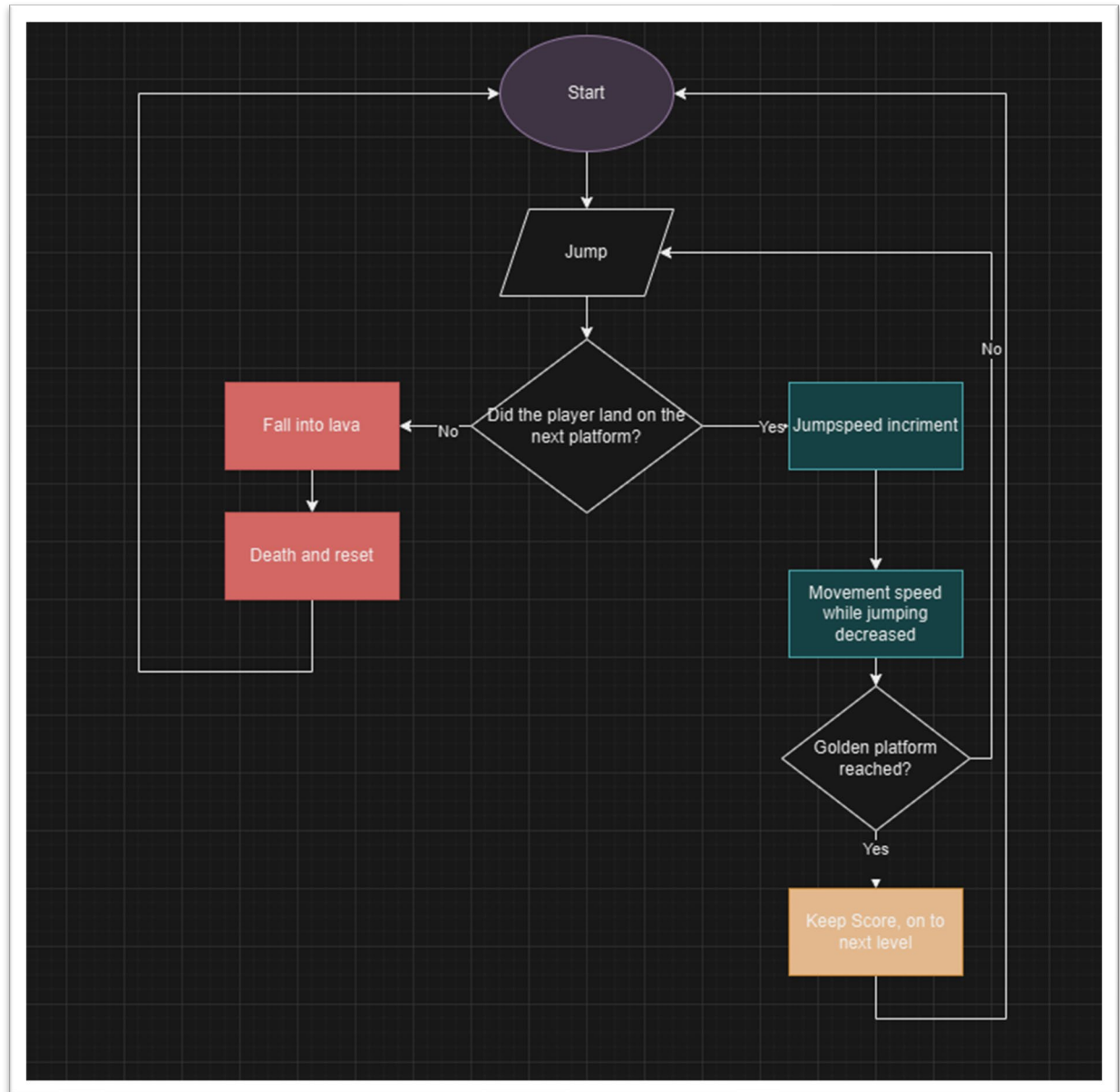


Both the player and platforms have attributes which depend on one another.

For instance, the platform's movement enter "slow motion" mode (they slow down by 1.5x) whenever the player jumps. This makes it easier for the player to land on fast moving platforms. This is balanced by the player's movement being slowed down every time he lands on a platform.

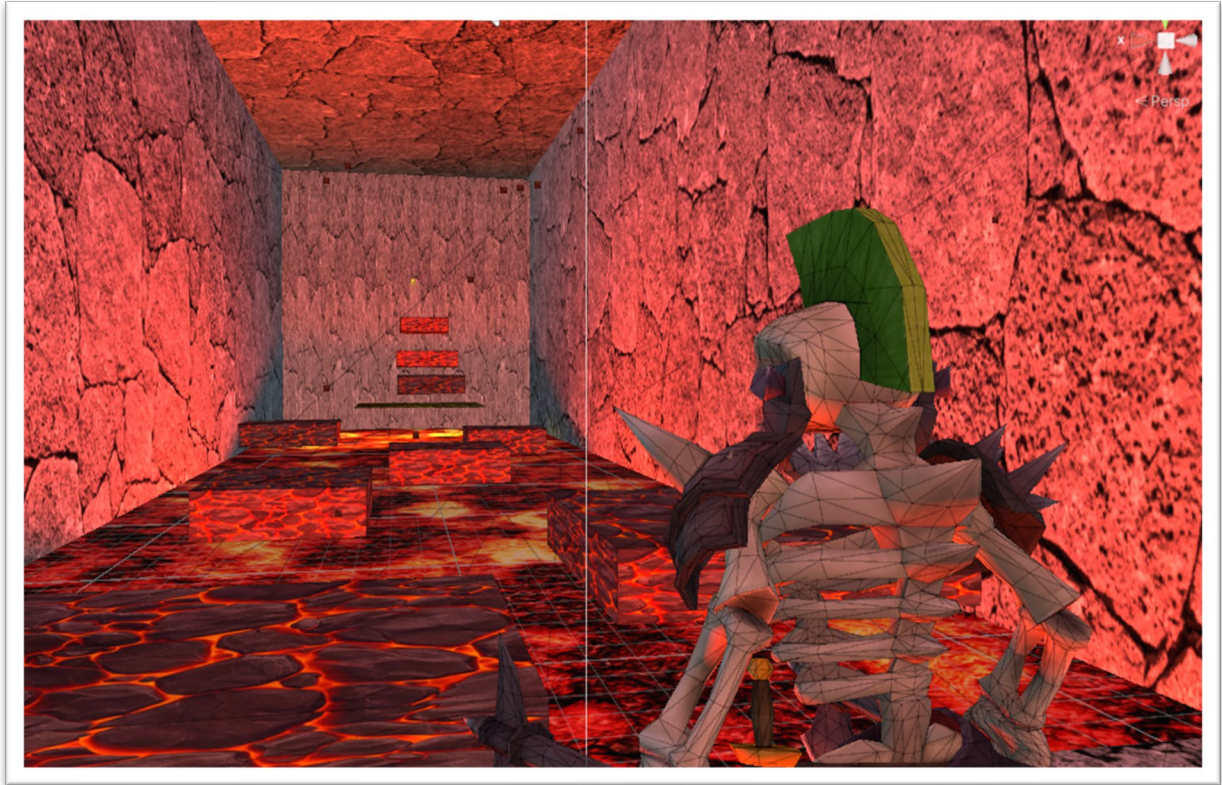
This essentially creates a system where the player has to plan ahead more and more as the game progresses since he/she can't manipulate the player object in the air as much, as the platform's and player's attributes are intertwined.

# Flowchart of Game Progression





## Story and Characters



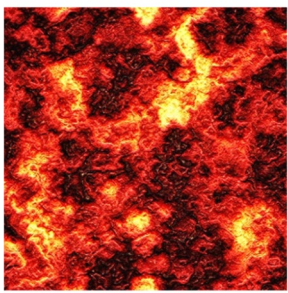
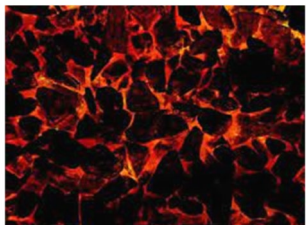
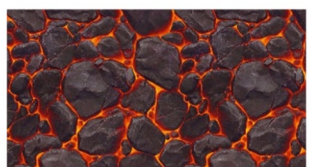
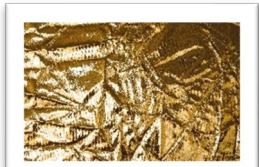
The story of “The Floor is Lava” is quite self explanatory and simple, as is the case with most hypercasual games.

You play as an unnamed skeleton wanting to escape a deep mineshaft who has to navigate crumbling magical moving platforms in order to do so.

## Formal Elements and Assets

A 3D, low – poly style reminiscent of late 1990's shooters like Quake or ElderScrolls2 is the primary inspiration for the game's aesthetics.

This would aide in giving the game the eerie feeling as intended. It also coincides with a short and simple self explanatory story of a skeleton escaping a deep abandoned mine.



The textures chosen were taken from stock images found on google images. These are (left to right, down) the gold platform, the platform, the ash, the walls and the lava.



The main player model was taken from the Unity Store titled “Skeleton Warrior”, it’s animations were also included in the package.

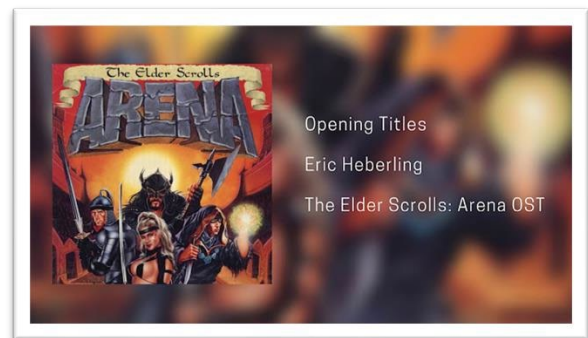
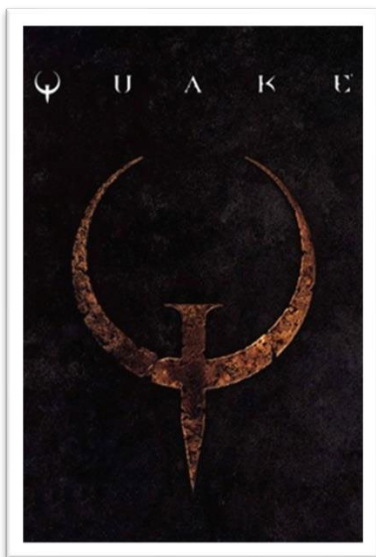


## Sound and Music

Retro 1990's dungeon crawler music (credits to Bethesda Softworks) was used to add to the eerie and retro formal elements previously mentioned.

A lava sound effect that plays continuously to coincide with the main threat of the game, the lava beneath was also added

Moreover, a “grunt” sound effect from quake when the player jumps was used as it gives the player feedback on what they're doing as well as it being a throwback to 1990's style videogames.



## Playtesting Documentation

Three playtesting sessions were planned to be conducted each with different people from various backgrounds. The types of questions will be different depending on the question and will be executed through a live interview on teams. Their gameplay and live reaction will also be recorded (with consent). This data will all be qualitative.

Playtesting with three different people was planned. One of them has a background (and degree) in game design so this allows more technical questions regarding feedback loops and core mechanics to be asked.

The other person is a hypercasual gamer and has a background in art which allows gauging of the more dramatic elements of the game.

The third person also has some experience in playing games but doesn't have a background in either art or game design so ask simple questions such as "is it fun" "is it frustrating" etc will be asked.

## **Playtesting Session 1**

Name: Anonymous

Background: Game Design

Intentions of Playtest: gather feedback on game mechanics/bugs

Data collection: Live play session and interview

Session Outline: First allow him to play the game (while recording) to see how he learns the mechanics, then allow him to try and find bugs and comment on them. After the play session stops ask him about the core mechanics and feedback loops.

Deliverables: consent paper

Results: an understanding on how the player learned to play the game, core mechanic outlines and potential bug fixes.

Evidence of session: Live and trimmed recording.

## **Playtesting Session 2**

Name: Anonymous

Background: Art

Intentions of Playtest: gather feedback on Dramatic Elements

Data collection: Live play session and interview

Session Outline: First show her the game, then allow her to play for a bit (not expecting her to get the hang of it). Ask her opinion on the artstyle

Deliverables: consent paper

Results: an opinion of the overall aesthetics of the game from an art student.

Evidence of session: Live and trimmed recording.

## **Playtesting Session 3**

Name: Anonymous

Background: Casual Gamer

Intentions of Playtest: gather feedback on the overall feel of the game

Data collection: Live play session and interview

Session Outline: Allow her to play the game, see whether she enjoys it and asks what frustrates her.

Deliverables: consent paper

Results: an opinion of the overall feel of the game

Evidence of session: Live and trimmed recording.

# Results and Subsequent Changes to the Game

## **Art Student's Commentary**

- Found difficulty getting past the first platform
- Highest score 8
- "Likes the feel of where I am"
- Would like the lava to move
- Make the moving platform different shapes
- Include Death sound
- Does not need the Axe
- Likes the lighting.

## **Changes:**

The platform's length, breath and size was changed as per the playtester's point on wanting the platforms to be more varied.

Although the lava moving was not able to be implemented, some particle effects were added to give it a more lively feel.

**Game Designer's commentary:**

- Realised you could jump on the same platform to get a higher score
- Camera angle made height of player not clear
- Exploited a collision bug which game him a high score of 46.
- After reaching Golden Platform, Can't Jump
- It is "skillful and fun"
- Keyboard entry is limited, can only use 2 of 3 buttons.
- Feedback loops are not very obvious

**Changes:**

Camera angle was changed to isometric to make depth judgement easier as the play tester complained about this point.

Collision bugs were fixed as the play tester found an exploit to add more points.

A bug involving not being able to jump.

The feedback loop involving the jumping higher after each platform was boosted slightly to make it more obvious.

**Casual Gamer's Commentary:**

- Said it was mildly entertaining and fun
- Said it was a bit too repetitive
- Said the controls were a bit too clunky
- Found it weird that the character doesn't move diagonally.