



**Design Document for:**

# Flamabill

Flamabill, Ahh thas hot



“What if Mario was on fire?”™

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# Table of Contents

|  |          |
|--|----------|
| <b>FLAMABILL</b>                         | <b>1</b> |
| <b>DESIGN HISTORY</b>                    | <b>5</b> |
| VERSION 0.00                             | 5        |
| VERSION 1.00                             |          |
| VERSION 1.10                             | 5        |
| VERSION 2.00                             |          |
| VERSION 2.10                             |          |
| VERSION 3.00                             | 5        |
| <b>GAME OVERVIEW</b>                     | <b>6</b> |
| PHILOSOPHY                               | 6        |
| <i>Philosophical point #1</i>            | 6        |
| <i>Philosophical point #2</i>            | 6        |
| COMMON QUESTIONS                         | 6        |
| <i>What is the game?</i>                 | 6        |
| <i>Why create this game?</i>             | 6        |
| <i>Where does the game take place?</i>   | 6        |
| <i>What do I control?</i>                | 6        |
| <i>How many characters do I control?</i> | 6        |
| <i>What is the main focus?</i>           | 6        |
| <i>What's different?</i>                 | 7        |
| <b>FEATURE SET</b>                       | <b>8</b> |
| GENERAL FEATURES                         | 8        |
| MULTI-PLAYER FEATURES                    | 8        |
| EDITOR                                   | 8        |
| GAME PLAY                                | 8        |
| <b>THE GAME WORLD</b>                    | <b>9</b> |
| OVERVIEW                                 | 9        |
| CHALLENGING PLATFORMER                   | 9        |
| RETRO ART STYLE                          | 9        |
| THE PHYSICAL WORLD                       | 9        |
| <i>Overview</i>                          | 9        |
| <i>Key Locations</i>                     | 9        |
| <i>Travel</i>                            | 9        |
| <i>Scale</i>                             | 9        |
| <i>Objects</i>                           | 9        |
| <i>Weather</i>                           | 9        |
| <i>Day and Night</i>                     | 9        |
| <i>Time</i>                              | 10       |
| RENDERING SYSTEM                         | 10       |
| <i>Overview</i>                          | 10       |
| <i>2D/3D Rendering</i>                   | 10       |
| CAMERA                                   | 10       |
| <i>Overview</i>                          | 10       |
| <i>Camera Detail #1</i>                  | 10       |
| <i>Camera Detail #2</i>                  | 10       |
| GAME ENGINE                              | 10       |
|  | 2        |

|   |           |
|---|-----------|
| <i>Overview</i>                         | 10        |
| <i>Game Engine Detail #1</i>            | 10        |
| <i>Water</i>                            | 10        |
| <i>Collision Detection</i>              | 10        |
| LIGHTING MODELS                         | 11        |
| <i>Overview</i>                         | 11        |
| <i>Lighting Model Detail #1</i>         | 11        |
| <i>Lighting Model Detail #2</i>         | 11        |
| <b>THE WORLD LAYOUT</b>                 | <b>12</b> |
| OVERVIEW                                | 12        |
| CAMPFIRES                               | 12        |
| 2D SIDE SCROLLING                       | 12        |
| <b>GAME CHARACTERS</b>                  | <b>13</b> |
| OVERVIEW                                | 13        |
| CREATING A CHARACTER                    | 13        |
| ENEMIES AND MONSTERS                    | 13        |
| <b>USER INTERFACE</b>                   | <b>14</b> |
| OVERVIEW                                | 14        |
| SIMPLE MENU SCREEN                      | 14        |
| HUD                                     | 14        |
| <b>WEAPONS</b>                          | <b>15</b> |
| OVERVIEW                                | 15        |
| <b>MUSICAL SCORES AND SOUND EFFECTS</b> | <b>16</b> |
| OVERVIEW                                | 16        |
| 3D SOUND                                | 16        |
| SOUND DESIGN                            | 16        |
| <b>SINGLE PLAYER GAME</b>               | <b>17</b> |
| OVERVIEW                                | 17        |
| <b>MULTI-PLAYER GAME</b>                | <b>18</b> |
| OVERVIEW                                | 18        |
| MAX PLAYERS                             | 18        |
| SERVERS                                 | 18        |
| CUSTOMIZATION                           | 18        |
| INTERNET                                | 18        |
| GAMING SITES                            | 18        |
| SAVING AND LOADING                      | 18        |
| <b>CHARACTER RENDERING</b>              | <b>19</b> |
| OVERVIEW                                | 19        |
| <b>WORLD EDITING</b>                    | <b>20</b> |
| OVERVIEW                                | 20        |
| <b>EXTRA MISCELLANEOUS STUFF</b>        | <b>21</b> |
| OVERVIEW                                | 21        |

STUFF WE ARE WORKING ON...

21

**22**

# Design History

In this section we aim to describe the process we went through to create our game for Games Fleadh 2019, each heading will look at a separate part of our design process.

## Version 0.00

Version 0 was our original Idea being conceived, we went out for pints, as a group we passed around ideas about what game we wanted to make and any ideas for good mechanics we could implement, this was all done without us considering the massive work involved. From day one we knew we wanted to not follow all the other groups in using a game engine to create our game, we used LibGDX java libraries in creating Flamabill as we said we would. We came up with the idea of a little flame being started, the flame could grow and shrink and burn objects on the map, we had one month to make it and 3 of the four team members had never coded in Java before in their lives.

## Version 1.00

Version 1 once we had finished deciding what exactly we were going to create, we began work, we wanted to have our own original animation and music, despite none of our team having any experience in creating animations or music. To begin with the coding, we first had to set up an initial screen, jobs were also divided, and work began on a menu screen. One member was given the screen and animation, one the rendering and map creation, one was given music creation and one was given the playscreen class. All the while we were conducting team meetings to discuss ideas for things we could implement into the game.

## Version 1.10

In Version 1.10 we actually started to merge our branches on git hub properly, the MenuScreen branch and WorldWork branches were merged so that we had a menu that continues on to a playscreen, this then meant the games menu buttons were working as they should've been, as branches started to be merged however, our inexperience with both java and the use of github led to a problem with the Development.iws and Development.ipr files on each team members computers, the IDE we used IntelliJ kept resetting information about directories we had put into it and we continued to have these issues for a good while through production. During version 1.10 we used a test map created by a team member using a tileset we found online just to test with

## Version 2.00

In Version 2.00 a lot of the textures and animations were changed, before now everything was very simply made, mostly with placeholders, now the menu had a working startup animation and buttons that were animated. Our member working on music became used to his tools and so became better at creating music, he made a track for the menu screen. He then began work on creating a moving tile in java that we are yet to implement due to the ipr and iws file problems.

## Version 2.10

In Version 2.10 work was started properly on a working character, for this the game camera had to be worked with to follow the character around the playscreen, a new tileset was created for Flamabill so that we could create every aspect ourselves. Animations were also developed more for possible enemies and checkpoints, these checkpoints also started to be coded into the game.

## **Version 3.00**

In Version 3.00, due to time constraints the Tileset that was being created was dropped, we found a more suitable 2D platformer pixel Tileset, animations were also taking longer than expected and enemies could not be implemented due to issues with creating a character that reacts with its environment and has correctly working physics, because of this, the decision to completely change our game to a 2 player experience was made and a new character class had to be created to accommodate player two, changes had to be made to the viewing cameras and the decision was made to make the game split screen, work is still ongoing on this game and issues are still arising but from version 3.00 Flamabill is finally coming together.

# Game Overview

## Philosophy

### Philosophical point #1

A lot of games are created for the players, or are marketed to be anyway, as a friend group in college our game is mainly made for ourselves, we had fun creating it and learning together and seeing our creation come to life in the form of a game has been extremely satisfying, if it just so happens to be enjoyable to someone else well that's an added bonus too.

### Philosophical point #2

Flamabill was created originally as a terrible name pun, literally we started with the pun, so if nothing else our work can show you how effective puns and being light-hearted can be.

## Common Questions

### What is the game?

A 2D pixel platformer created using Java libraries based around a little flame named Flamabill

### Why create this game?

We are a team of Second year Computer Science students and friends, most of whom never had any experience in java, this game serves as both an interesting project and good learning experience for us all in the future.

### Where does the game take place?

The only levels we have currently take place in a forest, Flamabill is a stray bit of ember from a campfire made by some college students camping in the woods who had a little too much alcohol.

### What do I control?

The player will control Flamabill himself, at least player 1 will, player 2 will control his Flamabuddy.

### How many characters do I control?

If you use both hands I guess it could be 2.

### What is the main focus?

Your main aim is to make it to the end of the course before your friend, and before the timer runs out and Flamabill is put out.

### What's different?

Lately we've noticed a decline in splitscreen games, which have been some of the best, making and playing a splitscreen game has given our team a sense of nostalgia we think is priceless.

# Feature Set

## General Features

Small Colourfull world  
Fast paced gameplay  
Competitive  
Splitscreen  
Two player  
Its own Music and character animations

## Multiplayer Features

Splitscreen  
Two player  
Shared keyboard controls

## Editor

No editor

## Gameplay

Fast paced  
Simple  
Nostalgic  
Two player  
Splitscreen  
Flamabill is a cool dude and you know it  
Created by friends to bring friends together (or tear them apart depending on how competitive you are)



# The Game World

## Overview

Flamabill was created in a forest by a campfire, he must travel and spread out keeping himself Hot with other campfire checkpoints he discovers along the way, lucky for him they're everywhere, unlucky for him, the world has dangers such as water that extinguish him and if he doesn't find campfires quick he's doomed.

## Challenging platformer

The platforms in the game wouldn't be too bad, only for the fact you know it's a race against time and a race against your friends to reach the finishing line, the splitscreen style and the time constraints mean players will find it difficult to master every jump.

## Retro Art Style

The art style used in the game is sure to instill a feeling of nostalgia in avid gamers and we believe it does this very effectively with a tileset not too much different to what you'd see in classic Mario or Sonic games.

## The Physical World

### Overview

The world currently is a single forest level with the intent to develop it further to include multiple regions each with their own properties and effects on the characters.

### Key Locations

The forest: made up of flat platforms, dangerous lakes large and small and trees, some caverns as well, and dotted throughout with campfires used as checkpoints to increase your time.

### Travel

Flamabill uses his little legs to run around and jump between platforms.

### Objects

In Flamabills world at the minute there's trees, lakes, caverns and campfires as checkpoints, as well as some flowers dotted around the map.

### Weather

No weather is present, so for Flamabill its a bright sunny day in level 1, however, we do have plans and a score ready for level 2 which will include rain beating down on Flamabill, this will result in less time to get to checkpoints and a heightened sense of urgency for the player.

### Day and Night

No Day and Night cycle.

## **Time**

Time is very important in this game, very much like a racing platformer it is vital the player gets to key locations within time constraints, a visual of the time will be displayed up on the Hud as a timer and as a “Heat” bar which will decrease until the player dies.

## **Rendering System**

### **Overview**

Our game doesn’t use a game engine, so all rendering is done with the aid of libraries.

### **2D/3D Rendering**

We render 2D animations in through .atlas files and spritesheet pngs.

## **Camera**

### **Overview**

Our camera is set to follow the character around the map with them in the center, the screen is split in two and each player can control their camera separately and independently of one another.

## **Game Engine**

### **Overview**

Our game uses Java Libraries and the LibGDX framework and so does not use a Game engine.

### **Water**

Water in the game is rendered the same as ground blocks but the object layer reacts differently than ground layers for water.

### **Collision Detection**

Our game uses the Box2D library to handle collisions, as well as collision filtering.

## **Lighting Models**

### **Overview**

There are currently no lighting models implemented.

# The World Layout

## Overview

The world is a side scrolling platform style, with platforms on many levels and a somewhat fixed path due to the campfires.

## Campfires

These guide the players through the levels and must be reached in order to continue and add to their time.

## 2D side scrolling

The world isn't procedurally generated and can be explored by the player through scrolling their character sideways through the levels

# Game Characters

## Overview

The player plays as Flamabill, a flame running throughout the levels to reach campfires and stay alive.

## Creating a Character

There is currently no character personalisation other than the fact a player may choose whether they are player one or player two by using the keys up, left and right for player one and w a and d for player two, player one and player two have separate skins so player two plays as a blue flame instead of an orange one.

## Enemies and Monsters

No monsters or enemies are currently implemented however we have begun work on creating them, flamabill and his flamabuddy will have to work to avoid personified water droplets, sprinklers, firemen and other hazards in future when they are implemented.

# User Interface

## Overview

The user interface consists of the Menu screen and the Hud for the players

## Simple Menu Screen

The menu screen consists of two buttons, designed lie wood, they begin as just plain brown but once they are hovered over they burn in an animation, There is only the Play and Quit buttons at the minute but we do have the intention to add more buttons in, such as a mute and one player/two player options.

## Hud

Again relatively simple hud it displays the Player number, a timer in the top right and a “Heat” bar that lowers over time, this works basically as a health bar and decreases over time. We have plans to implement a mechanic where it can be increased so the character may hit checkpoints and keep going.

# Weapons

## Overview

Flamabill has no weapons at all, it's a race against your friends and a challenge to avoid the dangers you may cross along the way, we feel having no weapons gives the player less of a chance of finding the game easy which increases its enjoyment.

# **Musical Scores and Sound Effects**

## **Overview**

The musical score tries to give a nostalgic feel to Flamabill , there are multiple songs throughout Flamabill. The first song we are introduced gives this strong nostalgic feel with an ambient sound. The second song brings tension and a fast paced rhythm to the game.

## **3D Sound**

Within Java there is a sound API which we took full advantage of as our game was developed with Java library, so this integrated well with the rest of the game .

## **Sound Design**

When designing and developing the song we looked for influence in other platforming game titles such as Donkey Kong and Mario. The repeating rhythms of the songs gave us a strong influence within our own songs. The steel drums and bongos gave from Donkey Kong were quite interesting.

# Single-Player Game

## Overview

Currently Flamabill is not available in a single-player mode, it started off that we were going to make it solely single player but we found out multiplayer is much more enjoyable, in future single-player will be added.



# **Multiplayer Game**

## **Overview**

Flamabill became a two player game very recently because we view it as more enjoyable, time constraints are also partly to blame for this as we need to create more enemies for the game.

## **Max Players**

Two players can play Flamabill at once, we have not implemented more than 2

## **Servers**

Our game does not use any servers, its a split screen game played off of the same computer on a shared keyboard.

## **Customization**

There is currently no customization in the game.

## **Internet**

Our game currently does not work over the internet.

## **Gaming Sites**

We use no gaming sites and it does not run off any special technology we made a simple split screen experience game for two people in close proximity to one another.

## **Saving and Loading**

The game may not be saved at the minute, once more levels are added in we may add this option, for now if the player dies it should end that match and restart the current level.

# Character Rendering

## Overview

To render the character, we originally create a png of sprites, along with a sprite atlas to determine the co-ordinates of each sprite frame. These sprite frames are then added to arrays delegating which animation they are for. Each animation is made up of a number of an array of TextureRegion objects with specific durations. Frames are then determined via a delegated state in the Player Class.

# **World Editing**

## **Overview**

Flamabill does not include a world editor, but may in the future.

# Extra Miscellaneous Stuff

## Overview

Flamabill is currently a very early work in progress, one month has been spent on it so far, with only about two weeks of actual work being done on the game, the rest is all planning and ideas.

## Stuff we are working on...

We will be working on a single-player experience for players and we will be adding many more enemies and traps into the game for the players to find more challenging we will also be working on things like:

- Improving the character movement to include things like wall jumping, being able to jump up through world platforms and various other movement improvements
- we are undecided on Flamabill's abilities to fight back against enemies but may include this in the future
- we are working on more maps and locations for Flamabill to take place
- we are working on improving animations and the tileset
- we want to add better abilities for the characters to interact to make the game more competitive
- we are trying to add in a raining weather system for level 2.

etc.