

# Your Company Name or Logo

**Design Document for:**

# Rumble Dash

An Adorable Multiplayer Racing Game

“Be there or be square!”

All work Copyright ©1999 by Your Company Name

Written by Chris Taylor

Version # 1.00

Tuesday, February 28, 2017



This work is licensed under a [Creative Commons Attribution 2.5 License](https://creativecommons.org/licenses/by/2.5/).  
You may redistribute and modify it freely, including for commercial use, so long as you provide attribution to Chris Taylor as the author of the original template.

# Table of Contents

<b>NAME OF GAME</b>	<b>1</b>
<b>DESIGN HISTORY</b>	<b>5</b>
VERSION 1.10	5
VERSION 2.00	5
VERSION 2.10	5
<b>GAME OVERVIEW</b>	<b>6</b>
PHILOSOPHY	6
<i>Philosophical point #1</i>	6
<i>Philosophical point #2</i>	6
<i>Philosophical point #3</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
WORLD FEATURE #1	9
WORLD FEATURE #2	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

<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
WORLD LAYOUT DETAIL #1	12
WORLD LAYOUT DETAIL #2	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
USER INTERFACE DETAIL #1	14
USER INTERFACE DETAIL #2	14
<b>WEAPONS</b>	<b>15</b>
OVERVIEW	15
WEAPONS DETAILS #1	15
WEAPONS DETAILS #2	15
<b>MUSICAL SCORES AND SOUND EFFECTS</b>	<b>16</b>
OVERVIEW	16
RED BOOK AUDIO	16
3D SOUND	16
SOUND DESIGN	16
<b>SINGLE PLAYER GAME</b>	<b>17</b>
OVERVIEW	17
SINGLE PLAYER GAME DETAIL #1	17
SINGLE PLAYER GAME DETAIL #2	17
STORY	17
HOURS OF GAME-PLAY	17
VICTORY CONDITIONS	17
<b>MULTI-PLAYER GAME</b>	<b>18</b>
OVERVIEW	18
MAX PLAYERS	18
SERVERS	18
CUSTOMIZATION	18
INTERNET	18
GAMING SITES	18
PERSISTENCE	18
SAVING AND LOADING	18

<b>CHARACTER RENDERING</b>	<b>19</b>
OVERVIEW	19
CHARACTER RENDERING DETAIL #1	19
CHARACTER RENDERING DETAIL #2	19
<b>WORLD EDITING</b>	<b>20</b>
OVERVIEW	20
WORLD EDITING DETAIL #1	20
WORLD EDITING DETAIL #2	20
<b>EXTRA MISCELLANEOUS STUFF</b>	<b>21</b>
OVERVIEW	21
JUNK I AM WORKING ON...	21
<b>“XYZ APPENDIX”</b>	<b>22</b>
<b>“OBJECTS APPENDIX”</b>	<b>22</b>
<b>“USER INTERFACE APPENDIX”</b>	<b>22</b>
<b>“NETWORKING APPENDIX”</b>	<b>22</b>
<b>“CHARACTER RENDERING AND ANIMATION APPENDIX”</b>	<b>22</b>
<b>“STORY APPENDIX”</b>	<b>22</b>

# Design History

This section is to review the process of writing the Design Document.

## Version 1.0

Version 1.0 was a quick, initial run through of what was required. Tasks were divided fairly among the team and, most importantly, the document was colour coded.

1. I divided to work up into what was realistic and manageable for either of us.
2. I removed any sections that did not apply to our game..
3. A colour-coded system was put in place for organisational and aesthetic reasons.
4. Characters and their stories were created

## Version 2.0

Version 2.0 is the result of a fairly substantial design change. after the coding began we started to change our minds about many things and so had to adjust our plans accordingly.

Included in the changes are:

1. Deciding on a final course of action
2. Some sections were re-written to accommodate the changes
3. Backstory to the game was formed
4. Characters narrowed down
5. Team became more realistic about progress within the time restrictions.

## Version 3.0

Version 3.0 is the result of the full team working simultaneously on the document. Sharing ideas, correcting others pieces and adding to sections we had already written.

Included in the changes are:

1. Some corrections, both grammatical and gameplay orientated.
2. Collaborated as a team.
3. Added more details to smaller sections of the document.
4. Added a picture of the first draft of characters.

# Game Overview

## My Game Design Goals and such things of that nature...

We believe there are too many generic platform / racing games. So, for our project, we made a platform & racing game - but about 112% more adorable than usual!

We wanted to have as much fun as possible making this game, so we implemented a giddiness factor to our design. If an idea was put out, and we both got super excited about it, we would add it to the design as well as we could.

## Common Questions

### What is the game?

A super-duper, not at all stereotypically girly, adventurous platform racer game where you can choose one of the adorable characters and race to victory while avoiding potentially life-threatening obstacles! Yay!

### Why create this game?

Our team gets very excited over the little things in life, like cutesy characters! We wanted to create an easy-to-play game that brings out the child in all of us while also being mildly violent (for those crazy thrill seekers in the audience!)

### Where does the game take place?

Picture this: A small, rural village with blue skies and a stretching horizon... This is Sunshine Valley. (Not at all affiliated with the Colombian town, although we were thrilled to see this place actually exists.)

### What do I control?

The player will choose a character to race as and they will be in control of their movements as they make their way around the course.

### How many characters do I control?

Ideally one but hey if you like a challenge, you could try being two characters! Double your chances of success! (Or failure!) The game can support up to 2 players / characters.

### What is the main focus?

The players' objective is simple: complete the course before the other competitors while racing to the flag. Also avoid anything that is vicious, dangerous or hindering in any way, shape or form... simple!

### What's different?

We aim to strive past every expectation of adorableness. This is something our market tends to

bypass for the sake of shooter games etc. We want to keep it light and friendly while also keeping things interesting. Also this isn't our stereotypical car racing game.

# Feature Set

## General Features

Original Brightly Coloured Artwork and Animations  
Quirky & Cute Cube Shaped Characters with added animations  
Interesting Map made with strategic platforms  
Health Bar  
Magic fire and ice blasts  
Unique story  
Happy-Go-Lucky, feel good audio

## Multiplayer Features

2 players sharing a keyboard

## Gameplay

Choosing your character is the first step, are you a Buddy or a Stella? Look to the controls option to see who's who.

Go to Back Story option to learn more about Sunshine Valley, the Rumble Dash Tournament, and the characters.

There is a lot of original artwork and animations to enjoy.

Then comes the fun part, run the course. Hop between obstacles, avoid the wrath of the terrain and your opponent and reach the flag before them!

## Artwork

All of the artwork you see on screen was created using GIMP software. All drawn freehand on a touchscreen. The idea was to go go as cute and cartoony as possible. We like to think we achieved that!

## Music

Unfortunately due to time restrictions \*cough\* five days \*cough\*, we didn't have time to create our own audio. We did however do our homework and discovered music from [dl-sounds.com](http://dl-sounds.com) and [soundbible.com](http://soundbible.com) that we felt matched our vision perfectly!



# The Game World

## Overview

A simple community village that hosts the annual Rumble Dash Tournament. This is a 2D platformer with multiple platforms to help in evading your opponent and getting ever closer to the prized flag. Avoiding threatening looking objects is advised. But you do you.

## Camera

Camera changes to accommodate the position of both players by tracking their positions. It's always useful to see what your doing.

## Hindrances

Be they natural or living, the world contains several deadly enemies and obstacles that will have the player cursing at the screen.

## The Physical World

### Overview

A sunny, blue-skied terrain with bad land development. Who thought it would be good idea to have pieces of land floating around? I'm not sure, but it works for us!  
//Potential to add more levels/terrain/locations as the game develops

### Key Locations

Lush green landscapes and blue skies with scattered clouds overhead. A few obstacles but nothing our players can't handle! An enclosed flag floats in the middle of the screen.

### Travel

The characters can be controlled using WASD (for Buddy) and Arrow Keys (for Stella). These control direction, jump and shoot. This is shown on the Controls screen.

### Scale

The characters start out at the bottom of the map. The further away you get from the opposing player the more of the map is revealed. The scale of the map compared to the players is quite big so you need to explore a bit to find the flag.

### Objects

There are platforms, characters, harmful ice and fire magic, obstacles and some surprises to hinder your opponents.

See the "Objects Appendix" for a list of all the objects found in the world.

## **Weather**

While racing the characters will be running in the bright skies of Sunshine Valley, with slight cloud cover. Crack out the sunscreen lads, it's always daytime in Sunshine Valley!

## **Camera**

The camera adjusts the size to accommodate both the players on the screen. As the players move about the camera zooms in and out. The further the players are from each other the more the camera zooms out.

It does this with a script ("CameraFollow.cs") that calculates the position of each character. It also uses a public min and max size that is easily changed. This helped a lot during the Level design phase.

When the character positions are calculated they are then subtracted from each other in update to find the changing width and height of the camera.

## **Game Engine**

The Game Engine used to make this game was in Unity on the 2D setting. It handles all sprites and scripts. Also makes interacting the scripts via public variables very easy.

## **Collision Detection**

Our game engine handles collision detection a lot, such as for the platforms. Each character has a check child component that senses when it is touching the ground.

Excerpt from "PlayerController.cs"

```
public Transform groundCheckPoint; => the check child component  
public float groundCheckRadius; => this makes sure it encompasses the character  
public LayerMask whatIsGround; => tells the scripts what the actual platforms are  
public bool isGrounded; => is the player on a platform/ground (true/false)
```

## **Lighting Models**

Uses a normal directional light to light up the world to see the colours more vividly. Extra lighting is not needed for this game.

## Story

Quote from game:

Open sky... rolling fields.. Questionable land planning... This is **Sunshine Valley!**

Home to the annual **Rumble Dash**, these adorable rural villagers live their lives in the hopes of one day competing in the prestigious Rumble Dash, to bring fame, glory, and purpose to their lives....

Cuties must compete to reach the Flag before their opponent while avoiding treacherous objects and the tiny fury of their fellow competitor!

Can you help these cuties rumble their way to victory?  
Be there, or be square!

Coming March 2017 at Games Fleadh

# Game Characters

## Overview

The characters in this game are little squared cuties, each with their own individual personalities. Designed lovingly and intricately on a napkin in a local Wok-In. If JK Rowling could do it, so could we!

## Creating a Character

Character customization is not currently available, players can choose between one of the preset characters.

## Enemies and Monsters

The enemy in this case is your opponent. Avoid their ice/fire magic as it can harm you. Dangerous looking spikes can also harm you. Basically if something looks like it could be harmful it probably is.

You can win the game by killing the other player. Or you can just get the flag, it's up to you.

## User Interface

Each screen/scene has it's own UI attached. In terms of the menu, controls, and backstory screens, the UI mainly features buttons leading to the different screens. These UI's implement the "Menu.cs" script to do this. The code is basically if you press a button it changes the scene.

However the Game screen has a script built into the UI to keep track of the players remaining lives. It does this using an array. If a player is hurt in some form or other, then it removes a life from the array list. The status of this is printed on the UI in the form of the classic pixelated hearts.

The Game Screen also has navigation to other screens built into the UI but instead of buttons it inputs two characters:

- 'N' - reloads the game ("new game")
- 'M' - back to main menu

## Weapons

The only weapons in the game are the fire and ice projectiles that spawn in front of the player with a press of a button. These projectiles, found in the \_Prefabs folder, implements the “Shooter.cs” and “DestroyOverTime.cs” scripts.

“Shooter.cs”

As you can probably guess this script shoots the projectile. It calculates the velocity in Update() which multiplies the speed by the current position of the projectile. It also includes statements that checks if it hits something. If this happens the projectile gets destroyed. If it collides with a player then the player takes damage

“DestroyOverTime.cs”

Also fairly self explanatory, this script destroys clones made from the projectile after a certain amount of time has passed so as to not use too much unnecessary memory.

# **Musical Scores and Sound Effects**

## **Overview**

We wanted to go for a very retro, happy vibe and hoped the audio in the game could reflect that.

## **Soundtrack**

Our background music was carefully selected from lots of potential pieces, although we knew as soon as we heard it that it was perfect for Rumble Dash. It was discovered on the site dl-sound.com and we felt it matched our theme impeccably.

## **Sound Effects**

In keeping with our adorable vibe, our sound effects were carefully selected to reflect our initial ideas. The website soundbible.com had everything we needed to achieve our audio goals.

# Multiplayer Game

## Overview

Multiple players race against each other, slowing each other down, trying to reach the finish flag first, and without dying!

## Max Players

Maximum 2 players currently. Potential to add more in later game models.

## Servers

Our game is local, peer-peer.



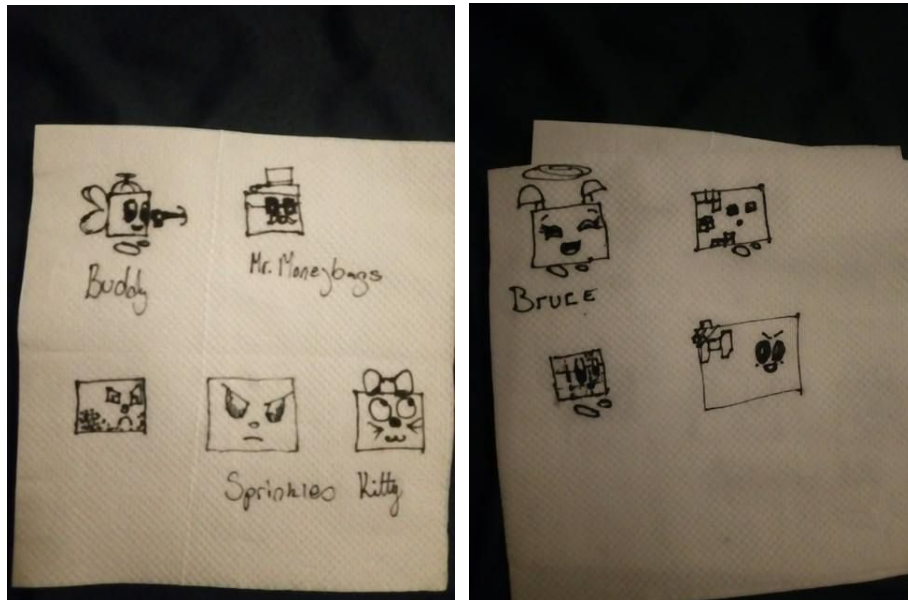
## Extra Miscellaneous Stuff

### Name Ideas:

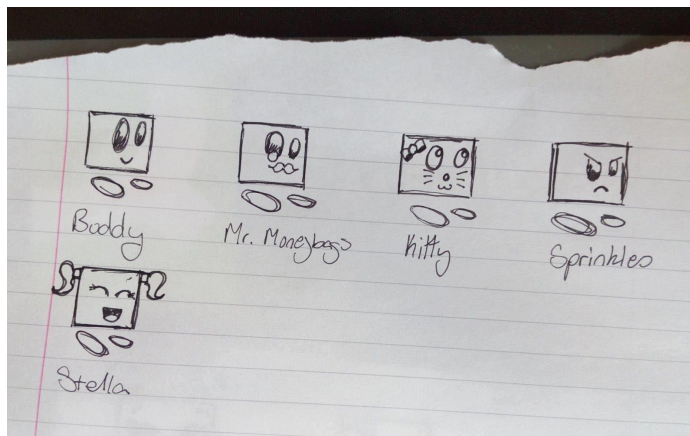
Rumble Dash  
Power Dash  
Sprinter Dash  
AdoraBrawl  
Cutesy Crawlers

### Character Development:

It all started in Wok-In...



Second Draft:



## **“Objects Appendix”**

- Sprites/Graphics
- Animated Sprites/Graphics
- Magic fire/ice bursts
- Magic fire/ice bursts spawn point
- Players/Characters
- Boolean object checks
- Buttons
- Music
- Platforms
- Edges
- Backgrounds
- Harmful objects
- UI objects
- Text
- Invisible check barriers