

# DOWNHILL MADNESS



## Technical Design Document

*UNITY CERTIFIED DEVELOPER COURSEWARE*

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## Game Development Team

### Members

#### PRODUCER

Daniel Valoria, Tommy Cao, Guillermo Mata, Manuel Perez

#### PRODUCTION MANAGER

Daniel Valoria, Tommy Cao, Guillermo Mata, Manuel Perez

#### PRODUCTION COORDINATOR

Daniel Valoria, Tommy Cao, Guillermo Mata, Manuel Perez

#### GAME DESIGNERS

Daniel Valoria, Tommy Cao, Guillermo Mata, Manuel Perez

#### PROGRAMMERS

Daniel Valoria, Tommy Cao, Guillermo Mata, Manuel Perez

#### AUDIO ENGINEERS

Daniel Valoria, Tommy Cao, Guillermo Mata, Manuel Perez

#### UX TESTERS

Daniel Valoria, Tommy Cao, Guillermo Mata, Manuel Perez

# Executive Summary

## 1 Game Overview

Downhill madness is a game where you are facing 4 other people on a race to see who goes down first. Bet, gamble, push people off the game to reach the bottom first!

## 2 Technical Summary

Downhill Madness is a game about rivalry. Race off against four other players and be the winner for all that sweet sweet money. The goal is to reach the finish line before your opponents!

PC, MAC AND LINUX STANDALONE

OS: Windows XP SP2+, Mac OS X 10.8+,

Graphics card: DX9 (shader model 2.0) capabilities; generally everything made since 2004 should work

ARMv7 (Cortex) CPU with NEON support or Atom CPU;

OpenGL ES 2.0 or later.

## Equipment

Members of the team will utilize a collection of 15" MacBook Pro 2017 computers as the primary hardware platform for game development and asset creation. Additional hardware choices include MacBook Pros, Windows PC computers, and miscellaneous hardware already owned by the team

| Product          | Task  | Cost | Quantity | Total |
|------------------|---|------|----------|-------|
| Macbook Pro 2017 | Asset Creation<br>Game Development<br>Texture | 1000 | 4        | 4000  |
| Custom PC        | Game Development                              | 1500 | 2        | 3000  |
| Total            |   |      |          | 7000  |

# Software

All the software used for the development of Downhill Madness will be able to produce high end visuals, while still being able to deploy across different platforms. Not all team members will utilize all software tools. Software requirements and selections will vary based on team member roles and responsibilities

| Product                 | Task               | Cost | Quantity | Total |
|-------------------------|--------------------|------|----------|-------|
| Unity Community Edition | Game Editor/Engine | 0    | 6        | 0     |
| Gitlab Rijeka           | Project Management | 0    | 6        | 0     |
| Photoshop CS6           | Textures           | 200  | 1        | 200   |
| Total                   |                    |      |          | 200   |

# Evaluation

## Game Engine

The game engine utilized for the development of Downhill Madness is Unity because we can create a 3D game with ease, we can make it highly-optimized and beautiful, and we can deploy it with a click to multiple platforms. In addition, we can use Unity's integrated services to speed up our development process, optimize our game, connect with an audience, and achieve success.

## Target Platform

Downhill Madness will be deployed to PC and Mac OSX. The PC/MAC OSX platform is the perfect target for this game as it is designed to educate new game developers on how to create a Unity game. Deploying across these platforms will increase visibility and utilization by linking the two products in the different markets.

# Scheduling

## Development Plan

| Product   | Week 1-5          | Week 6                          | Week 7             | Week 8 | Week 9            | Week 10 | Week 11 | Week 12                                 |
|-----------|-------------------|---------------------------------|--------------------|--------|-------------------|---------|---------|---|
| Artwork   |                   | Start with concept art for game |                    |        | Create GUI layout |         |         | Character Texture<br>Background Texture |
| 3d Assets |                   | Create moveable players         | Create PGC terrain |        |                   |         |         | Create Multiple Players                 |
| Scripting |                   | Move players                    | PGC Editor         |        | Multiplayer Lobby |         |         |   |
| Audio     |                   | Test potential soundtracks      |                    |        |                   |         |         |   |
| Misc      | Gather game ideas | Create a solid game idea        |                    |        |                   |         |         | BETA Testing                            |

## Milestones

|            |   |
|------------|---|
| Week 1-5   | Decided what the game was going to be.  |
| Week 6     | Created moveable players.   |
| Week 7     | Created a PCG Terrain where the players race on.  |
| Week 8     | N/A   |
| Week 9     | Created GUI Layout for multiplayer.   |
| Week 10-11 | N/A   |
| Week 12    | Made game come together with artwork, and achieved having multiple players in the same match. |

## Updates, Maintenance & DLCs

N/A

# Work Environment

## Remote Collaboration

The team collaborated on this project from all around San Diego. Because of this, we are developing the game utilizing Google Drive for documents and GitLab to maintain a single, synched project that allows us to iterate on the deliverables in an organized manner.

# File Formats & NamingConvention

| Asset Type | SubType     | Naming Convention            | FileFormat | Annotations |
|------------|-------------|------------------------------|------------|-------------|
| 3D asset   | Characters  | CharacterName                | FBX        |             |
|            | Prop        | PropName                     | FBX        |             |
|            | Environment | EnvironmentName              | FBX        |             |
| Textures   |             | CharacterName_TextureChannel | JPG<br>PNG |             |
| Scripts    | Characters  | CharacterAction              | C#         |             |
|            | Player      | PlayerAction                 | C#         |             |
|            | Multiplayer | PhotonBehavior               | C#         |             |
| Materials  | UI          | CharacterNameMaterial        | mat        |             |
| UI         |             | UIElementState               | TGA PNG    |             |

## Levels

## Menu

Click on an option:

- Start: play game
- Controls: how to play
- Credits: catalog of assets used
- End: quit game

## Lobby

Waiting room to create a new session or join a session.

## Play

Zombie Toys will consist of one closed level. The level will consist of the start platform, the procedurally-generated terrain, and the finish platform. There will be four different spawn points on the starting platform.

## Asset List

| Asset Type  | Asset Name      |
|-------------|-----------------|
| Players     | Character1      |
|             | Character2      |
|             | Character3      |
|             | Character4      |
|             | Character5      |
| Enemies     | Other Players   |
| Allies      | None            |
| Props       | None            |
| Environment | Start Platform  |
|             | Terrain         |
|             | Finish Platform |