GD50 Mario Remake

| **TECHNICAL DESIGN DOCUMENT** |
| --- |
| Unity Certified Associate Courseware |

Contents

Executive Summary . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 3

Game Overview . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .3

Technical Summary . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 3

Equipment . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 4

Hardware . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 4

Software . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .4

Evaluation . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 5

Game Engine . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 5

Target Platform . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .5

Scheduling . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 6

Development Plan . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 6

Milestones . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 7

Updates, Maintenance & DLCs . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 7

Work Environment . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 7

Remote Collaboration . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 7

File Formats & Naming convention . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 8

Levels . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 9

Level 1 . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 9

Asset List . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 9

Game Development Team Positions

PRODUCER

PRODUCTION MANAGER

PRODUCTION COORDINATOR

GAME DESIGNERS

SYSTEMS/IT COORDINATOR

PROGRAMMERS

TECHNICAL ARTISTS

AUDIO ENGINEERS

UX TESTERS

**IMPORTANT NOTE**

This *Technical Design Document* is offered as an example for educational and teaching purposes only. The facts and figures contained herein are for illustrative purposes only and may not be representative of the actual resource allocation and investment needed to create *Zombie Toys*.

Executive Summary

Game Overview

*Zombie Toys* is a third-person, endless, survival arcade game where the Player is a child (boy  
or girl) who has awoken to discover that all their toys have become zombified. Now the Player must survive by avoiding the zombified toys. They may accrue points by using a special remote control toy to attack the zombie toys in one of four different ways (Lightning Ray, Freeze Ray, Stink Bomb, and Slime) . Using points accrued through the various attacks, the Player may also spawn Allies, which include a Sheep and a Dog . The Allies will help the Player avoid the zombie toy Enemies and survive in the game .

Technical Summary

*Zombie Toys* will be developed in approximately 4 months by roughly 12 people using the Unity game engine . For 3D asset creation, Autodesk Maya 2016 will be used, with Adobe Photoshop and Autodesk Mudbox utilized for texture painting and sculpting . The total production cost of the game will exceed USD $50,000 .00 . Revenue from the game will offset the investment . The remaining costs will be amortized through the release of future game titles .

The game will be deployed for PC and for Android simultaneously . The minimum requirements include:

PC, MAC AND LINUX STANDALONE

OS: Windows XP SP2+, Mac OS X 10 .8+, Ubuntu 12 .04+, SteamOS+ Graphics card: DX9 (Shader Model 2 .0) capabilities; generally everything made since 2004 should work

ANDROID

OS 2 .3 .1 or later;  
ARMv7 (Cortex) CPU with NEON support or Atom CPU; OpenGL ES 2 .0 or later .

Equipment

Hardware

Members of the team will utilize a collection of 15” MacBook Pro 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

MacBook Pro 15”

Wacom Intuos

TASK

Asset Creation Game Development Texture Painting

Texture painting Sculpting

COST\* QUANTITY TOTAL

$2,000 .00 2

$200 .00 2

$4,000

$400 .00

*\*values listed are general approximations in USD*

Software

TOTAL $4,400.00

All the software used for the development of *Zombie Toys* 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

Unity Pro

Autodesk Maya 2016

Autodesk Mudbox 2015

Adobe Photoshop

Google Office

TASK

Game Editor /Engine

3D Asset Modeling 3D Animation

Sculpting Texture painting

Texture painting

Project Management

COST\* QUANTITY TOTAL

$1,500 .00 6

$1,500 .00 4

$100 .00 2

$150 .00 4

$0 .00 12

$9,000 .00

$6,000 .00

$200 .00

$600 .00

$0 .00

*\*values listed are general approximations in USD*

TOTAL $15,800.00

Evaluation

Game Engine

The game engine utilized for the development of *Zombie Toys* 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

*Zombie Toys* will be deployed to PC and Android . On one hand, the PC platform is the perfect target for this game as it is designed to educate new game developers on how to create a Unity game . On the other hand, the Android platform is a great target because many aspiring game developers want to learn how to publish mobile games . Deploying across two different platforms will increase visibility and utilization by linking the two products in the different markets .

Scheduling

Development Plan

PRODUCT

DECEMBER 2015

Characters Concept designs

Props references Sketching level design

Blocking of props

Low resolution prototype of characters

Blocking animation

Character control PC

Navigation and enemy agents

Main soundtrack

JANUARY 2016

Character texturing

Props and environment textures

Final character modeling

First pass animation

Final props and environment modeling

Player attacks

Enemy attacks

Game manager

Ally behavior

Final 3D assets integration

Main soundtrack Audio fx

FEBRUARY 2016

HUD prototype

Lighting first pass

Material setup for characters and environment

Animation final polish

Defining the walkable area

Creating spawn points Adding audio

Audio fx variances

Prepare beta testing reports

Beta testing  
Create SEO campaign

MARCH 2016

Final HUD design for PC and Mobile

Final lighting and backing

Refinement

| 2D Art |
| --- |
| 3D Assets |
| Scripting |
| Audio |
| Misc |

Trailer and images for publishing

QA  
Publish to Steam Publish to Google Play

Milestones

| 17 Dec 2015 |
| --- |
| 29 Jan 2016 |
| 18 Feb 2016 |
| 31 Mar 2016 |

Prototype test-out  
Final 3D asset integration to the game First Beta  
Gold

Updates, Maintenance & DLCs

| Jun 2016 |
| --- |
| Sept 2016 |
| Nov 2016 |

Beach skin

Dog Ally

Christmas Skin

Create a skin representing the beach theme

Add a Dog Ally with a different behavior than the Sheep

Create a skin for Christmas theme

Work Environment

Remote Collaboration

The team is multi-national; collaborating on this project from around the world . Because of this, we are developing the game utilizing Google Drive for documents and Unity Collaborate to maintain a single, synced project that allows us to iterate on the deliverables in an organized manner .

File Formats & Naming Convention

ASSET TYPE

SUBTYPE

Characters Props Environment

Attacks

Characters Player

Characters VFX

NAMING CONVENTION

CharacterName PropName EnvironmentName

AnimationClipName

CharacterName\_TextureChannel PropNameTextureChannel

WeaponAttackType

CharacterNameBehavior PlayerBehavior

CharacterNameMaterial ElementMaterial

UIElementState

FILE FORMAT

FBX FBX FBX

In the Model FBX

JPG PNG TIFF

C#

C# C#

\* .mat

TGA PNG

ANNOTATIONS

Idle Move Death

Weapon: Frost, Lightning, Slime, Stink

Attack: Attack, Debuff, Bolt, Projectile, Hit

Materials do not have  
a specific naming convention in this project

| 3D Asset |
| --- |
|  |
|  |
| Animations |
| Textures |
| Scripts |
|  |
|  |
| Materials |
|  |
| UI |

Levels

Level 1

Zombie Toys will consist of one endless level . The level will consist of the children’s room, with toys (dispersed around the floor) that will act as obstacles for the Player and for the Enemies . The toy elements (that serve as props) are placed so the Player can not be occluded easily when they move behind one .

There will be four (4) different spawn points in the level . Each spawn point is displayed as a green circle in the scheme below . Enemies will appear from these spawn points at a precise rate .

Asset List

Boy Girl

Clown Hellephant ZomBear ZomDuck Zombunny

Sheep

Arches  
Bat  
Blox  
Clock DollArm Dollhouse Drawers Firetruck Hearse Lighting Robot SpinningTop Stool

Train

Wall Floor WallStar

| Players |
| --- |
| Enemies |
| Allies |
| Props |
| Environment |