Galway Mayo Institute of Technology, Dublin Rd Campus

BSc in Software Development

Mobile Applications Development 3 Design Document

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Chapter 1

Project Overview

1.0.1 Introduction

Welcome my name is Tomás O'Malley (G00361128@gmit.ie) I am a final year Software Development student studying @ Galway Mayo Institute of Technology . Here I will be documenting the obstactles , game design etc to my ment for myis the Design 4th Year endless runner for the Module Mobile Applications 3. The game I have decided to create will be named " Coffee Run" and based around the beloved bevarge coffee.

1.0.2 Objectives

To create a concrete/precise write up to develope a 3D Video Game using Unity
<div align="center">Game Requirements</div>

1. The game must be created using c-sharp scripts using the Unty 3D Enviroment

2. The game must have a control system e.g WASD keys combination and or Gesture based for mobile Devices.

3. The game must have a graphical front end for the user to interact with e.g menus systems.

4. The game must involve a protagonist character and enemies/targets throughout the gameplay.

5. The game must include power ups to reward the player.

6. The game have a multiplayer functionality to be played as both a single player and multiplayer experience.

Chapter 2

Game Philosophy

2.0.1   Types of Games

1. 3D Rail Shooter

   - A rail shooter is a type of action-based video game. In a rail shooter the player control is limited to directing where to fire a virtual gun or move their avatar around the screen; the player does not control the path their avatar takes from the start to the end (although they may be able to pause that movement).Examples of 3D Rail Shooter - StarFox 64 on nintendo 64.

2. - 3D Endless Runner

   - An Endless Runner is characterized as an action game, linear in design with no end, without pauses or breaks for rest and no stages or changing levels. It has one continuous level. The game difficulty starts slow and easy.Examples of Endless Runners include Temple run available on the Ios Platform.

3. Traditional Board Game

- Board games are traditionally a subset of tabletop games that involve counters or pieces moved or placed on a pre-marked surface or "board", according to a set of rules. In common parlance, however, a board game need not necessarily contain a physical board.

- The Game I have chose to base my project off of is the classic iOS game "Temple run" as outlined above in (1).I opted to use the clone and tweak approach to create a fuller game for modern users.The Game will be named "Coffee Run" referring to the endless movement of the main character who is a a cup of coffee.The game will be aimed for PC users with peripheals such as keyboard , mouse etc.

Chapter 3

Introduction to 3D Gaming

3.0.1 3D History

1. 3D Gaming Hall of Fame

   - Doom was the first 3D FPS shooter games to be released.It was released December 10 , 1993 by Jihn Romero and a team of four other progammers. John is now a resident of Galway City and continues to create games. Doom was a huge success and a massive breakthrough for 3D graphics and set a standard for whats to be expected from fps shooters and soundtracks.

Chapter 4

Front End

4.0.1   Graphical User Interface

1. Splash Screen

   -

2. Menu System

   -

3. In Game

   -

Chapter 5

Control Mechanisms

5.0.1 WASD Control Mechanismn

The Player will control their movement through the use of the WASD keys. I found this is the mostcommon movement keyset from research online and from my experience of Computer gaming.I found this is the movement keyset for right handed People.WASD was also a standard used in the 1970s for video games like wizardy and allowed for the number pad to be free for additional controls.I decided that the fire action will be mapped to the space bar as it is too the most common approach . Controls for the Player Object are as follows W-Jump , A-Left , S-Duck , D-Right , Spacebar-Fire bullet and P to pause the game session.

1. Button Combinations

   - (W) - When the W key is triggered the player will jump upwards and play a short animation
   - (A) - When the A key is triggered the player will move left and a short animation will play to immerse the player
   - (S) - When the S key is triggered the player will duck downwards and a short animatiopn will play
   - (D) - When the D key is triggered the player will
   - (SPACEBAR) - When the space bar is triggered the fire button will be triggered and a bullet object will be shot
   - (P) - When the P key is triggered the game will come to a hault and the player will be prompted with a puase menu

Chapter 6

Software

6.0.1   Development Tools

1. Unity Engine

   - Unity is a cross-platform game engine developed by Unity Technologies, first announced and released in June 2005 at Apple Inc.'s Worldwide Developers Conference as a Mac OS X-exclusive game engine. As of 2018, the engine had been extended to support more than 25 platforms.

2. LaTex Document Editor

   - LaTeX, stylized within the system as LaTeX, is a software system for document preparation. When writing, the writer uses plain text as opposed to the formatted text found in "What You See Is What You Get" word processors like Microsoft Word, LibreOffice Writer and Apple Pages

3. Windows 10 Operating System

   - Windows 10 is a series of operating systems developed by Microsoft and released as part of its Windows NT family of operating systems. It is the successor to Windows 8.1, released nearly two years earlier, and was released to manufacturing on July 15, 2015, and broadly released for the general public on

4. GitHub Version Control

   - GitHub, Inc. is an American multinational corporation that provides hosting for software development and version control using Git. It offers the distributed version control and source code management functionality of Git, plus its own features.

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The Gameplay

Chapter 8

Game Characters

8.0.1 Models

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8.0.2 Enemies/Targets

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Level Design

9.0.1   Art Direction

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9.0.2   Difficulty

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Reward System

10.0.1 Collectables

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10.0.2 Power Ups

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Obstacles

11.0.1 Artificial Intelligence

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