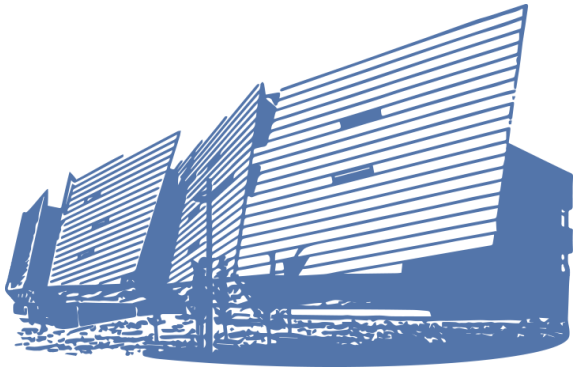

Galway Mayo Institute of Technology, Dublin Rd Campus

BSc Project

Software Testing Project

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Chapter 1

Introduction

Welcome to my Test case documentation for the latest game developed by Game Development International Ltd . The company provided me with a short brief informing me on the features/fundamentals to their new game title. The product developed by Game Development International Ltd is a 2D side scrolling platformer which borrows behaviors from other titles such as 'Shovel knight' to 'Skyrim'. Here are a list of the characteristics/functions set in their title.

Game fundamentals

1. Allow the player to control a specific character, that has an important fictional/narrative role.
2. Have game statistics and/or relational attributes with other game objects, enemies, and/or the player character.
3. Allow the player to take on and navigate the levels using an easy-to-use user interface.
4. Have obstacles that the player must overcome, such as enemies and bosses.

The game holds a rich number of features and should give me the opportunity to create lots of different tests.

Chapter 2

Objectives and Tasks

2.0.1 Objectives

An objective

2.0.2 Tasks

A Task

Chapter 3

Scope

Game Development International Ltd has rich catalogue of features in their game which I cover briefly in the Introduction.

Here are some of the technical features

1. **Menu Systems :** Test the products menu such as the start pause menu screens
2. **In game controls :** Test the basic used to interact with the game e.g W- To move forward
3. **Character Attributes :** Test the basic character attributes such as health and points

Chapter 4

Testing Strategy

4.0.1 Unit Testing

Unit Testing is a level of software testing where individual units/components of a software are tested. A unit is the smallest testable part of any software. It usually has one or a few inputs and usually a single output. In procedural programming, a unit may be an individual program, function, procedure,etc.

4.0.2 System and Integration Testing

System Integration Testing is defined as a type of software testing carried out in an integrated hardware and software environment to verify the behaviour of the complete system.It is testing conducted on a complete, integrated system to evaluate the system's compliance with its specified requirement.

4.0.3 Performance and Stress Testing

Performance testing is carried out to check the system's performance under varying loads.Stress testing is carried out to check the behaviour of the system under the sudden increased load of the system or software application. It only checks the stability of the system or software application.

4.0.4 User Acceptance Testing

User acceptance testing (UAT) is the last phase of the software testing process. During UAT, actual software users test the software to make sure it can handle required tasks in real-world scenarios, according to specifications

4.0.5 Batch Testing

Batch testing is a comprehensive test on your current trained model to measure its performance in LUIS. The data sets used for batch testing should not include example utterances in the intents or utterances received from the prediction runtime endpoint.

4.0.6 Automated Regression Testing

Regression Testing is defined as a type of software testing to confirm that a recent program or code change has not adversely affected existing features. Regression Testing is nothing but a full or partial selection of already executed test cases which are re-executed to ensure existing functionalities work fine

4.0.7 Beta Testing

A beta test is a type of testing period for a computer product prior to any sort of commercial or official release. Beta testing is considered the last stage of testing, and normally involves distributing the product to beta test sites and individual users ("beta testers") outside the company for real-world exposure.

Chapter 5

Test Schedule

A test Schedule

Chapter 6

Control Procedures

When testing the products features when a bug is found I report it in a .csv file containing under a template a I created.The template will be as follows

Example Bug Reported

Bug reporting			
Bug Name	Component	Tester	Risk
Character Movement	Player Movement in main Scene	Tomás	Severe

Chapter 7

Features to Be Tested

Some Features to Be Tested

Chapter 8

Features Not to Be Tested

Some Features Not to Be Tested

Chapter 9

Resources-Roles and Responsibilities

The Resources and Roles - Responsibilities

Chapter 10

Schedules

The Schedules

Chapter 11

Risks and Assumptions

The Risks/Assumptions

Chapter 12

Tools

The Tools

Chapter 13

References

13.0.1 Framework

After a couple of meeting and weighing the positives and negatives of other systems such as Android Studio Java/Http we came to the conclusion we would need a strong framework to develop with.All the options we discussed had either one of the two flaws 1. Web Based - Using a JSF framework , building with Java/HTML was a aimed at web development or 2.Non-Hybrid - Environments such as Android Studio only supported creating Mobile Applications for the Android ecosystem.

React Native is a JavaScript framework for writing real, natively rendering mobile applications for iOS and Android. ... React Native also exposes JavaScript interfaces for platform APIs, so your React Native apps can access platform features like the phone camera, or the user's location.

JavaScript is a text-based programming language used both on the client-side and server-side that allows you to make web pages interactive.Incorporating JavaScript improves the user experience of the web page by converting it from a static page into an interactive one. To recap, JavaScript adds behavior to web pages.

13.0.2 Database Connection

From day one it was obvious we would need some sort of database system such as SQL or No SQL to handle or data but it was unsure for the platform to use .SQL has always been the normal technology used until the new Object-Orientated Database model was deployed.After researching online and Discussing with our allocated project supervisor we came to the conclusion for this project using the MongoDb NoSQL Database System would be ideal.

MongoDB is a document-oriented database which stores data in JSON-like documents with dynamic schema. It means you can store your records without worrying about the data structure such as the number of fields or types of fields to store values.

13.0.3 API'S

An application program interface (API) is a set of routines, protocols, and tools for building software applications. Basically, an API specifies how software components should interact. Additionally, APIs are used when programming graphical user interface (GUI) components.

React native supports many rich apis fro creating applications such to access systems alert system , camera-roll memory and so on.We required so may of accessing memory and we decided to implement the Google Fire-base database System.We will incorporate firebase to save our users comments submitted to the forum

Firebase is a mobile and web application development platform developed by Firebase, Inc. in 2011, then acquired by Google in 2014. As of March 2020, the Firebase platform has 19 products, which are used by more than 1.5 million apps.

Another popular API we will use is the React native Calendar API sourced via Github.com .This API makes it a breeze to add a calendar system .

13.0.4 Web vs Mobile

The whole objective or learning outcome of this team project is to develop I piece of software .In our previous modules such as Mobile Applications Development(Semester 3) We created a UWP mobile application and in Data Centric Web Applications(Semester 5) We developed a web Application.We have never developed a hybrid Mobile Application in this semester(6).Mobile Applications are now the most way people interact with their smartphones.Developing a Hybrid Application will also be an extremely beneficial project to showcase at a software job interview.

One of the main the largest strengths of React Native is how flexible of a platform. I plan to host this application as a website too using a free host platform such as GitHub Pages.By providing a mobile/web version of this application I hope to create a larger target audience for my app.

13.0.5 Start up Guide

We used a very detailed set up guide from tutorial link which i will reference in the References page.Underneath is the install process.

1. Install Software's : Node.JS + npm
2. Open a command Prompt on Windows
3. Enter 'npm install -g create-react-native-app' and wait to install
4. Enter 'npm install -g create-react-native-app' and wait to install
5. Enter npm install -g react-native-cli and wait to install
6. Enter expo Start and the application will begin