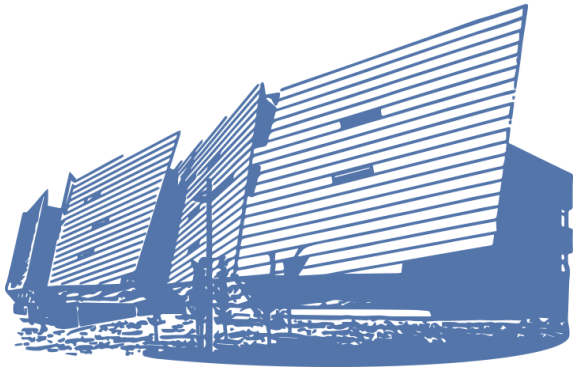

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BSc Project

Software Testing Project

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Contents

Chapter 1

Introduction

1.0.1 Test Plan Template

Game Development International Ltd 2D game

1.0.2 Prepared by

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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.Game testing is a huge part of our teams experience and we will apply the different methodologies to test and document their Product.Overall we were happy with the game Design Document provided by'Game Development International Ltd' which my whole team studied. Exclusive access to the game allowed to Alpha test the game.

Chapter 2

Objectives and Tasks

2.0.1 Objectives

Here some of the primary objectives of the test Plan

1. Defining Tasks and Responsibilites
    - One of the main areas of the test plan is to precisouly define the tasks and the repsonsibilites of each member involved in the company and clearly mark the Software testing life .
2. Communication
    - Communication is vital when working in a team and can be a barrier to successful testing.THe test plan allows the teakm to know the issues e.g Unit Testing bug and can allow other members to collaborate when approiate.
3. Documentation
    - Overall this test plan is being a documenatation mapping the contionous intergation and or progress of the Software product we are testing.This document will allow us record the overall quality of the Companie sproducts and will allow us to excel in the manner we overcome/analyse problems in future applications.

2.0.2 Tasks

Here are some of the tasks that I will go into detail later

1. Report Document
    - Each member of the team is required to report the obstacles they encountered during their interaction with the sofwtare lifecycle process.
2. Create Validation
    - Validation refers to the action of checking or proving the validity or accuracy of something.We aim to validate each component in the Product for example characters attributes such as health using testing strategies such as unit testing etc .
3. Test Products Components
    - Each component of the product will be marked to a tester and they will be resopnisble to documenting their discoveries and including files such as .csv mapping the time and the component where the program passed or failed.

4. Bug Report

    - A bug report must be created and maintained throughout the testing process.Bug report systems such as Bugzilla will be used to optimise our productivity and diagnos the serverity of the faults in the program.

5. Testing methodologies

    - The testing methodolgies will be defined by the complexity and the severity of the Products attribute .For example if the game has an issue with users losing their save games this is more vital than in game health issue.We must access what are the most important components e.g user security

Chapter 3

Scope

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

3.0.1 General

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

3.0.2 Tactics

All tests will be carried out in Alpha Testing Enviroments.

Alpha testing is a type of acceptance testing; performed to identify all possible issues/bugs before releasing the product to everyday users or the public. ... Alpha testing is carried out in a lab environment and usually, the testers are internal employees of the organization.

The Scope to this approach is to find as many bugs in the game and understand how these bugs congregate in other areas of the application. To test all of these existing fubctions I will be incrementally testing using a procedural approach for all , An example. When testing the Save Game I would note the steps taken e.g

1. Launch game on browser/Unity Etc
2. Click PLay Button
3. Press the pause button in game e.g ESC
4. Click the Save Gamwe button listed using mosue or Arrwo keys and press enter button on keyboard
5. Exit Game by pressing exit button using arrow keys and enter keys
6. Click Resume button
7. If game resumes from save file . Test case is a Pass if not , a fail.

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.
The unit Testing will be carried out by

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.

System and Integration Testing will be carried out by

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.

Performance and Stress Testing will be carried out by

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.

User Acceptance Testing will be carried out by

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.

Batch Testing will be carried out by

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.

Automated Regression Testing will be carried out by

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.

Beta Testing will be carried out by

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

1. Performance Testing
    - In Modern computer systems we have an excess of power e.g in cores ,RAM (Random Access memory) , violtile memory etc.2D games are not demanding to run on modern systems and 2d games have been popular on computers since the 1960s.
2. Stress Testing
    - Stress testing is a type of software testing that verifies the stability and reliability of the system. It is evident the game is very light in terms of computationally power and trying to play the game for hours would be extremely unproductive.
3. Multiple Mobile Platforms
    - We will not test this game for multiple smartphones platforms e.g Apple (Ios) and Android . Smartphones have near identcial architecture and we can presume with high levels of confidence that this game will show the same behaviour indpendent of the Operating System.
4. Usability testing
    - Testing for user-friendliness is clearly subjective and will depend on the targeted end-user or customer.Nearly all computer/mobile games use the most common movement systems e.g WASD and Gestures.We are highly confident the user experience is tradational and usability testing would be redundent.

Chapter 9

Resources-Roles and Responsibilities

The Resources and Roles - Responsibilities

Chapter 10

Schedules

Scheduling in project management is the listing of activities, deliverables, and milestones within a project. A schedule also usually includes the planned start and finish date, duration, and resources assigned to each activity. Effective project scheduling is a critical component of successful time management.

Scheduling was a very difficult area to manage when testing their product.We had to create an incrementally approach starting with the bare bones of the Product and working from the ground up e.g testing the transition from Start menu to the in game.Underneath are Schedules created during testing.

Test Plan

The overall testPlan

Test Cases

The overall test cases

Test Incident Reports

the test incident Reports

Test Summary Reports

The Test Summary Reports

Chapter 11

Risks and Assumptions

The Risks/Assumptions

Chapter 12

Tools

A program used for software development or system maintenance. Virtually any program or utility that helps programmers or users develop applications or maintain their computers can be called a tool. The Tools used during testing are as follows :

1. Bugzilla - Bug Report Tool
    - Bugzilla is a web-based general-purpose bug tracking system and testing tool originally developed and used by the Mozilla project , and licensed under the Mozilla Public License
2. Selenium (software) - Automated Testing
    - Selenium is a portable framework for testing web applications. Selenium provides a playback tool for authoring functional tests without the need to learn a test scripting language
3. LaTeX - Documentation System
    - LaTeX is a document preparation system. 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

Chapter 13

References