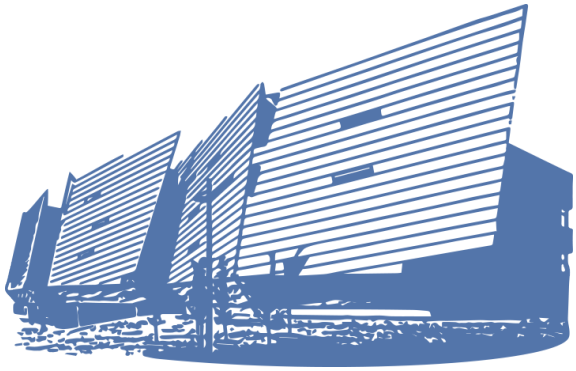

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BSc Project

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

1. Tomas O'Malley(G00361128)
2. John Smith
3. Laine Louhglin
4. Tyler Durden
5. Grace Kelly
6. Mia Wallace
7. Jackie Brown
8. June Carter
9. Jack Daniels
10. John Harris

Welcome to our Test case documentation for the latest game developed by Game Development International Ltd. The company provided me with a short brief informing me of the features/fundamentals of their new game title. The product developed by Game Development International Ltd is a 2D side-scrolling platformer that 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 allow me to create lots of different tests. Game testing is a huge part of our team's 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 precisely define the tasks and the responsibilities of each member involved in the company and 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 team to know the issues e.g Unit Testing bug and can allow other members to collaborate when appropriate.
3. Documentation
    - Overall this test plan is being a documentation mapping the continuous integration and or progress of the Software product we are testing. This document will allow us to record the overall quality of the Companie products and will allow us to excel in the manner we overcome/analyze 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 software 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 character 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 responsible for 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 optimize our productivity and diagnose the severity of the faults in the program.

5. Testing methodologies

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

Chapter 3

Scope

Game Development International Ltd has a rich catalog 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 Environment.

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 of 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 functions 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 myself (Tomas O'Malley).

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 John Smith.

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 Laine Louhglin.

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 Tyler Durden.

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 Grace Kelly.

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 Mia Wallace.

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 Jackie Brown.

Chapter 5

Test Schedule

5.0.1 Schedule

The Testing Schedule

1. Milestone 1
   - The Milestone
     Staff : Facilities : Tools :
2. Milestone 2
   - Milestone 2
     Staff : Facilities : Tools :
3. Milestone 3
   - Milestone 3
     Staff : Facilities : Tools :
4. Milestone 4
   - Milestone
     Staff : Facilities : Tools :

Chapter 6

Control Procedures

6.0.1 Procedures

When testing the product features when a bug is found I report it in a .csv file containing under a template 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

7.0.1 The Features

Some Features to Be Tested

1. Menu Systems
    - The Menu Systems
2. Character Movement
    - The Character Movement
3. Enemies
    - The Enemies
4. Save Game
    - The Save Game feature

Chapter 8

Features Not to Be Tested

8.0.1 Features

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) , volatile 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 smartphone platforms e.g Apple (Ios) and Android. Smartphones have near-identical architecture and we can presume with high levels of confidence that this game will show the same behavior independent of the Operating System.

4. Usability testing

    - Testing for user-friendliness is 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 traditional and usability testing would be redundant.

Chapter 9

Resources-Roles and Responsibilities

9.0.1 Roles

Here are the The Resources and Roles - Responsibilities

1. Testing Group

    - The testing group consisted of the staff members 1.John Smith 2.Laine Louhglin 3.Tyler Durden 4.Grace Kelly 5.Mia Wallace 6.Jackie Brown and 7.Tomas Omalley .The main roles of the testing groups was the create test cases e.g User acceptance test and study the behaviour of the processes.Each member of the testing team was delivered a role and its their repsonsible to test and report back to their management whether there is a success or a failure.

2. Report Group

    - The Report group consisted of the staff members 1.Jack Daniels and 2. John Harris Each week we would take part in an online meeting via Microsoft teams where the report Group would deliever a report with an overview of productivty , bugs tested , failed test cases and new bug discoveries.Each week the developers will hand over an individual report and the report group would prepare , manage and design report merging all the developers feedback into a single report.

3. Team Management

    - The manager of the team for the product was June Carter.We all tested the product in an agile Enivroment where all developer would test in short iterations.June acted as the Scrum master and her role was to manage developers and manage the process of how information is exchanged.

Chapter 10

Schedules

10.0.1 Schedule

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 incremental 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

11.0.1 Risks

The Risks/Assumptions

Chapter 12

Tools

12.0.1 The 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.
    - This bug reporting has been a go to for our company and we will not be changing as its an industry standard.
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.
    - We found our development team were very pleased with the product.The documentation online was very clear and can be also ran in browsers which is an added bonus for our web-developers.
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.
    - Each developer was required to upload a .pdf outlying their discoveries throughout the week and this open source Tex editor was suitable.It is cross Platform (Mac,Windows,Linux) so our developers on other platforms had no issues installing.We may consider microsoft Word in future due to its steep learning curve.
4. Microsoft Teams - Online Management Platform
    - Microsoft Teams is a persistent chat-based collaboration platform complete with document sharing, online meetings, and many more extremely useful features for business communications. Having an excellent team space is key to being able to make creative decisions and communicate with one another.

- The whole team must be connected 24/7 and we found this platform suited our criteria 1.Responsive 2.Private Chatting 3.Instant Messeging .We will use this platform again in the future to monitor our workplaces/employees productivity