luis enereh

Software Testing

Test plan project

Contents

[1.INTRODUCTION 2](#_Toc39521617)

[2.0 OBJECTIVES AND TASKS 2](#_Toc39521618)

[2.1 Objectives 2](#_Toc39521619)

[2.2 Tasks 3](#_Toc39521620)

[3.0 SCOPE 4](#_Toc39521621)

[4.0 TESTING STRATEGY 4](#_Toc39521622)

[4.1 UNIT TESTING 4](#_Toc39521623)

[4.2 SYSTEM AND INTEGRATION TESTING 5](#_Toc39521624)

[4.3 PERFORMANCE AND STRESS TESTING 6](#_Toc39521625)

[4.4 USER ACCEPTANCE TESTING 6](#_Toc39521626)

# 1.INTRODUCTION

This test plan is being developed for Game Development International Ltd. They have created a new game created with 2D sprites and animations and the background being converted to pixel art sprites and the concept is similar to well-known games such as Sonic the Hedgehog or Donkey Kong which use horizontal scrolling techniques and want a test plan document for it. The character which is a wizard will go through the levels which get more advanced after each one you complete. The wizard has health which can be lost if you get attacked by the enemies and if the wizard attacks and kills the enemies he progresses. The wizard will be able to regain some health in certain parts of the levels.

This game can be played on PC and on a mobile device.

# 2.0 OBJECTIVES AND TASKS

The objectives are to test every aspect of the game, its functionality, and its flow. The aim is to find as many software defects as possible to make sure the game is bug free before its released. There will be a service legal agreement document upload.

## 2.1 Objectives

Testing list:

* Start-up menu, Play, Settings, Load Game, Delete, Exit Game

Play should take the player to level one

Settings should allow the player edit game settings such as sound, music.

Load Game should allow the player to load the last stage of the game they left on

Delete Game should delete any saved stages

Exit Game should allow you to quit and leave the game

* In game menus, includes options when the game is paused.

The player should be able to pause, resume the game as well as some of the options available in the start-up menu such as settings and exit game.

There is a Save Game option which allows the player to save the game at the current stage that they are in and later be able to continue where they left off by selecting the load game option in the start menu.

* Control Mechanisms, move forward, move backwards, jump, crouch, attack, pause/resume

On the Mobile all the controls are on the screen, there will be arrows to move and a crouch button and an attack button.

The Pause/Resume button will have a button on the top right of the screen.

All these controls will be tested and documented if there are any issues.

Move forward (PC) is either the right arrow or the D key.

Move Backwards (PC) is either left arrow or A key

Jump (PC) is either Up arrow or W key

Crouch is C key

Attack is Left mouse click or R key

Pause/Resume is spacebar

All these controls will be tested and documented if there are any issues.

* Game play

Once the player opens the game, they should get a menu that has three options, Play, settings and exit game. The player should then be able to click play and it should load the first level and it should start the game straight away. Once the level begins the player can go through the level and when they have completed the first level it should load the second level.

In the beginning of the first level, a pop up will appear to show the player the controls of the game. The game has three levels which increase in difficulty once you complete them. The difficulty should be from different aspects such as having more enemies show up, or more health for the enemies which makes it harder to kill them.

Once the player completes the levels, they should be given the option to start again or quit the game or if they choose settings, they could adjust the sound. The exit game option should close the game.

All these factors of the game will be thoroughly tested and the testing will also include verifying if the graphics of the characters aren’t bugging or if the pixels are at the right settings, as well as if the game flows well, the horizontal scroll.

The goal is to make sure all this functions at the best level and to find any bugs with any of these features. The game should be easy to understand and instructions on how to play should be clear. This will also be tested.

## 2.2 Tasks

1. Open the game from a website or application.
2. Click exit game to test if the game closes
3. Click settings to test if it lets you adjust the sound music
4. Adjust the sound and music to test if it works
5. Click play game to test if it starts up level 1
6. Test all controls such as up, back, jump, crouch, attack and finally, press pause
7. Press resume and then press settings to test if it works there
8. Adjust and test the sound and music
9. Click save game to test if it saves it at the stage the player is in
10. Click exit game to test if it allows you to leave
11. Open the game again
12. Click load game to test if it was saved in the same position where the player left
13. Continue playing and test to test if you can attack an enemy
14. Let the enemy attack you to test if the health goes down
15. Let your health go to zero to test if it restarts the level
16. Let your health go down and pick up a health pack to test if it works and gives the character more health
17. Click pause and save game
18. Open game and click delete game to see if it deletes the stage you last saved
19. Restart the game and attempt to complete level 1 to test if it goes to level 2 immediately
20. Complete level 2 to test if it goes to level 3 immediately
21. Complete level 3 and test if it gives you the options menu again
22. Exit game

# 3.0 SCOPE

General

The game is being tested as shown above in objectives and tasks. The plan is being made to carry out a thorough and professional test plan. All the tests will be completed in a 2-week period where we will devote a day to carry out certain functions. This is to ensure a good and extensive test of this game for its final release to the customers. The tests will be carried out with patience and as if a user would be trying the game for the first time. We want to ensure that the game is of a high quality with no bugs or issues and it flows well, as well as it is easy to understand the game controls. All the buttons will be tested well, all the in-game assets such as health, enemies, and the boss will be tested.

Tactics

The objectives and tasks will be accomplished on a schedule as stated above. We plan to test all aspects in an organised fashion and to notify a representative of Game Development International Ltd promptly to arrange a meeting and present them with our findings and input.

# 4.0 TESTING STRATEGY

Testing strategy is vital for a successful test case. It is important to maintain a consistent and efficient strategy to get the best and correct results. All features will have a specific timeframe for testing and will be tested in the best possible way. The activities will be documented at the highest level and thoroughly tested. As stated, before each task will have a specific timeframe according to its importance in the overall game.

## 4.1 UNIT TESTING

**Definition**:

Unit testing is when you test the smallest piece of a verifiable software in the application. In the case of this game it could be a certain function to make the character go forward or backwards. Unit testing is going deeper into smaller aspects of the application and testing each part. Unit testing validates each unit of the game works as it was intended. It should have inputs and one output.

Some advantages of unit testing:

* Reduces defects in new code, reduces bugs when fixing functionality
* Reduces cost of testing because defects are found early on
* Improves design and allows better refactoring of code

Unit Testing Techniques:

Black Box Testing – Input and output are tested

White Box Testing – Tests which one of those functions’ behaviour is tested

Gray Box Testing – To Execute tests, risks, and assessment methods

**Participants**: The role of unit testing is done by the people in the development side of the game. This makes things clearer for them rather than any other department doing it.

**Methodology**: Unit testing will be conducted by the development department and there will be many tests to be carried out including, code for the horizontal scroll, its important that that works without any faults, tests of every aspect of the movement of the characters in the game as well as the functionality of the health system implemented. The test scripts are usually conducted by the development team as well. The sequence will be tested as the game progresses, as stated above in objectives and tasks, we plan to test it thoroughly and at one stage at a time to make sure it is in the best possible condition come the release of the game.

## 4.2 SYSTEM AND INTEGRATION TESTING

**Definition**:

System and integration testing, better known as software testing, carried out in an integrated hardware and software environment to verify the behaviour of the complete system.

It deals with the verification of high and low-level software requirements in the specification of the software design document.

SIT helps:

* detect problems early
* correct timing
* earlier feedback

**Participants**:

This role can be shared with some developers a but mainly it is the testers who do most of the SIT.

**Methodology**:

SIT will help with the integration of the software and hardware side of things and will make sure that the defects are found early which makes it easier to fix the issues. The testers will write the scripts and the events will be sequenced as they are needed. Everything will have its allocated time to be tested and completed.

## 4.3 PERFORMANCE AND STRESS TESTING

**Definition:**

**Performance Testing:** Tests the software to establish the systems performance including its stability under a workload, reactiveness, and sensitivity.

**Stress Testing:** This verifies the stability and reliability of the system. This then establishes the robustness and error handling under heavy load conditions.

**Participants**: The testers would be responsible for doing these tests because they will try push the game to the limit and determine whether it will break. This will prove whether the game is reliable and sustainable to high level workloads.

**Methodology**:

Performance and stress testing will be conducted with the highest level by our testers. Testers would make sure to overload the game and continue to test its reliability and how it responds to a high workload. Testers want to push the game to the limit, so the developers get a better insight on how it all reacts. Testers will write the scripts and testing will be sequential according to its importance.

## 4.4 USER ACCEPTANCE TESTING