Adrian Rodriguez, Christopher Flores, Nichola Lovell, Nicklaus Robins, Patricia Sipes

Game 2338  Fall 2015



**TESTING DOCUMENTATION**

**Contents**

[**PART I: SCHEDULE** 2](https://d.docs.live.net/3fefbf7f4fc10de6/Documents/Group1-TestingFinal.docx#_Toc437092295)

[**SCHEDULE I** 3](#_Toc437092296)

[**SCHEDULE II (REVISED):** 4](#_Toc437092297)

[**SCHEDULE III (REVISED):** 5](#_Toc437092298)

[**PART II: TEST PLAN** 6](https://d.docs.live.net/3fefbf7f4fc10de6/Documents/Group1-TestingFinal.docx#_Toc437092299)

[**SECTION I: GENERAL INFORMATION** 7](#_Toc437092300)

[**SUMMARY** 7](#_Toc437092301)

[**ENVIRONMENT AND PRETEST** 7](#_Toc437092302)

[**TEST OBJECTIVES** 7](#_Toc437092303)

[**ACCEPTANCE CRITERIA** 7](#_Toc437092304)

[**REFERENCES** 7](#_Toc437092305)

[**SECTION II: PLAN** 9](#_Toc437092306)

[**SOFTWARE DESCRIPTION** 9](#_Toc437092307)

[**TEST TEAM** 9](#_Toc437092308)

[**MILESTONES** 9](#_Toc437092309)

[**BUDGETS** 9](#_Toc437092310)

[**TESTING** 10](#_Toc437092311)

[**SECTION III: SPECIFICATIONS AND EVALUATIONS** 11](#_Toc437092312)

[**SPECIFICATIONS** 11](#_Toc437092313)

[**METHODS AND CONSTRAINTS** 22](#_Toc437092314)

[**EVALUATION** 23](#_Toc437092315)

[**PART III: TEST CASES** 24](https://d.docs.live.net/3fefbf7f4fc10de6/Documents/Group1-TestingFinal.docx#_Toc437092316)

[**Test Case ID: HDEATH001** 25](#_Toc437092317)

[**Test Case ID: Money001** 26](#_Toc437092318)

[**Test Case ID: TD-001** 27](#_Toc437092319)

[**Test Case ID: TD-002** 28](#_Toc437092320)

[**Test Case ID: TD-003** 29](#_Toc437092321)

[**Test Case ID: AUD001** 30](#_Toc437092322)

[**Test Case ID: Enc002** 31](#_Toc437092323)

[**Test Case ID: Achieve003** 32](#_Toc437092324)

[**Test Case ID: A2.1y2w3** 34](#_Toc437092325)

[**Test Case ID: Inv0.1, Inv0.2** 36](#_Toc437092326)

[**PART IV: TEST REPORT** 38](https://d.docs.live.net/3fefbf7f4fc10de6/Documents/Group1-TestingFinal.docx#_Toc437092327)

[**SECTION 1: OVERVIEW OF TEST RESULTS** 39](#_Toc437092328)

[**SECTION 2: DETAILED TEST RESULTS** 41](#_Toc437092329)

[**SECTION 3: SUMMARY OF DEFECTS** 43](#_Toc437092330)

[**PART V: STATUS REPORTS** 44](https://d.docs.live.net/3fefbf7f4fc10de6/Documents/Group1-TestingFinal.docx#_Toc437092331)

[**STATUS REPORT I** 45](#_Toc437092332)

[**STATUS REPORT II** 46](#_Toc437092333)

Patricia Sipes



# **PART I: SCHEDULE**

## **SCHEDULE I**

Game Selection               2-11 Nov.       Committee, Nicklaus Robins, Nichola Lovell, Patricia Sipes (Final decided game from Nicklaus Robins)

Develop Schedule           12- 13 Nov.       Committee (first meeting): Nicklaus Robins, Nichola Lovell, Patricia Sipes

Create Test Plan              14 – 17 Nov.       Patricia Sipes (Nicola Lovell and others to edit/help fill out, split plan up)

Create Test Cases           17 – 19 Nov.       All group members are responsible for 2-3 cases

(Meeting to take place on the 17th or at earliest time so no two test plans cover the same information)

Execute Test Cases         18 – 20 Nov.       Each person is assigned to test between 6 and 9 cases (depending on what tests are turned in, so that each test is executed by 3 different people). Defects will be compiled as a detailed list and turned over to ONE person to write a comprehensive Test Report over all tests.

Create Test Report          18-21 Nov.       TBD

Send Status Report 1      14 Nov.        Patricia Sipes

Send Status Report 2      21 Nov.       Nichola Lovell

## **SCHEDULE II (REVISED):**

* Nov 18: Test Plan developed.
* Nov 19: Test Plan edited and pass group inspection.
* Nov 19 – 20: Test cases assigned.
  + Testers may split up tests as seen fit, no two testers should test the same test case on the same platform. At this time, tests executors should also be assigned.
* Nov 19 – 22: Test cases written.
  + Test case should be turned over to person compiling final report as well as assigned test executor as soon as done.
* Nov 21:
* Nov 22: ALL TEST CASES ARE TURNED IN AND HANDED TO TEST EXECUTORS.
* Nov 20 – 25: Test cases executed, each case tested 3 times.
  + Turn in test execution and bug report as soon as completed.
* Nov 25: ALL EXECUTION TESTS AND BUG REPORTS HANDED OVER FOR TEST REPORT.
* Nov 25 – 28: Test Report written.
* Nov 28: ALL DOCUMENTATION TURNED OVER FOR INCLUSION IN FINAL REPORT.
* Nov 29 – 30: Final report compiled.
* Nov 30: REPORT TURNED IN TO PROJECT MANAGER.

## **SCHEDULE III (REVISED):**

* Nov 18: Test Plan developed.
* Nov 19: Test Plan edited and pass group inspection.
* Nov 19 – 20: Test cases assigned.
  + Testers may split up tests as seen fit, no two testers should test the same test case on the same platform. At this time, tests executors should also be assigned.
* Nov 19 – 25: Test cases written.
  + Test case should be turned over to person compiling final report as well as assigned test executor as soon as done.
* Nov 26: ALL TEST CASES ARE TURNED IN AND HANDED TO TEST EXECUTORS.
* Nov 26-28: Test cases executed, each case tested 3 times.
  + Turn in test execution and bug report as soon as completed.
* Nov 29: ALL EXECUTION TESTS AND BUG REPORTS HANDED OVER FOR TEST REPORT.
* Nov 30 –Dec 2: Test Report written.
* Dec 3: ALL DOCUMENTATION TURNED OVER FOR INCLUSION IN FINAL REPORT.
* Dec 3,4: Final report compiled.
* Dec 5: REPORT TURNED IN TO PROJECT MANAGER.



# **PART II: TEST PLAN**

Patricia Sipes

## **SECTION I: GENERAL INFORMATION**

### **SUMMARY**

*Kingdom Rush* is a 2011 multi-platform tower-defense game with social media and Steam integration created by Ironhide Game Studios and produced by Armor Games. For the purposes of this test and evaluation, campaign mode and startup is being tested with the first three selectable heroes across PC and mobile platforms.

### **ENVIRONMENT AND PRETEST**

* Aimed user community comprises of casual gamers and intermediate strategy players with ranged computer literacy.
* Game is only being tested in Campaign mode and startup.
* Game is available through Steam, Kongregate, ArmorGames.com, iOS, Android, Windows, and Amazon app stores. Game is optimized for tablet use and screens 5 in +.

### **TEST OBJECTIVES**

Test aims for functioning single player free campaign, integration of base (free on pay markets) heroes, and balanced tower styles.

### **ACCEPTANCE CRITERIA**

* No level 1 bugs in campaign mode or on startup: level 1 bugs denote bugs that crash game or cause critical failures.
* No level 2 bugs in campaign mode or on startup: level 2 bugs denote bugs that cause levels to be unfinishable.
* Minimal balance issues: balance issues should be contained to minimal or cosmetic defects.
* Minimal graphic issues: clipping and or seaming should be kept to a minimum unless absolutely unfixable.
* Social media should integrate flawlessly, all trophies should be achievable through Android, Steam, and Kongregate systems.

### **REFERENCES**

* Mobile/tablet
  + Amazon App Store (free): <http://www.amazon.com/Kingdom-Rush-Kindle-Tablet-Edition/dp/B00A6RCSKC>
  + Google Play Store (free): <https://play.google.com/store/apps/details?id=com.ironhidegames.android.kingdomrush>
  + iOS Store (free): <https://itunes.apple.com/us/app/kingdom-rush-hd/id489265199?mt=8&ign-mpt=uo%3D4>
* PC/online
  + Armorgames(free): http://armorgames.com/play/12141/kingdom-rush
  + Kongregate (free): <http://www.kongregate.com/games/ironhidegames/kingdom-rush>
  + Steam (not free): <http://store.steampowered.com/app/246420/>

## **SECTION II: PLAN**

### **SOFTWARE DESCRIPTION**

* PC with internet connection:
  + Mac
  + Windows
  + Linux + Steam OS
* Smart phone or tablet with 3g, 4g, or wireless connection, 175 mb (400 mb for apple devices) free for instillation
  + Android 4.0 or higher
  + Kindle/Amazon with Android 4.0 or higher
  + iOS 6 or higher; compatible with iPad

### **TEST TEAM**

* Project Manager: Chandra Abrahams
* Test Manager: Patricia Sipes
* Lead Testers: Nichola Lovell, Nicklaus Robins
* General Testers: Christopher Flores, Adrian Rodriguez

### **MILESTONES**

* Nov 18: Test Plan developed.
* Nov 19: Test Plan edited and pass group inspection.
* Nov 19 – 20: Test cases assigned.
  + Testers may split up tests as seen fit, no two testers should test the same test case on the same platform. At this time, tests executors should also be assigned.
* Nov 19 – 22: Test cases written.
  + Test case should be turned over to person compiling final report as well as assigned test executor as soon as done.
* Nov 22: ALL TEST CASES ARE TURNED IN AND HANDED TO TEST EXECUTORS.
* Nov 20 – 25: Test cases executed, each case tested 3 times.
  + Turn in test execution and bug report as soon as completed.
* Nov 25: ALL EXECUTION TESTS AND BUG REPORTS HANDED OVER FOR TEST REPORT.
* Nov 25 – 28: Test Report written.
* Nov 28: ALL DOCUMENTATION TURNED OVER FOR INCLUSION IN FINAL REPORT.
* Nov 29 – 30: Final report compiled.
* Nov 30: REPORT TURNED IN TO PROJECT MANAGER.

### **BUDGETS**

Allocated budget for testing is dependent on quality of work (as team and individually) from 0 (F) to 100 (A+).

### **TESTING**

#### SCHEDULE

See [Milestones](#_MILESTONES): 1 Month timeframe.

#### REQUIREMENTS

* Equipment
  + Computer and/or appropriate mobile/tablet device
    - See [Software Description](#_SOFTWARE_DESCRIPTION).
  + Microsoft Word (or other word processor capable of opening .docx and saving out files openable in Word).
  + Skype for communication.
  + Canvas mail for communication.
* Software
  + See [Software Description](#_SOFTWARE_DESCRIPTION).
  + *Kingdom Rush* application.
* Hardware
  + See [Software Description](#_SOFTWARE_DESCRIPTION).
* Testers
  + Testers should have base familiarity with the mechanics behind tower defense games and the platforms being tested.

#### TESTING MATERIALS

Microsoft Word and Excel will be used for documentation and reporting.

#### TEST TRAINING

Testers are expected to have some base familiarity with the game during the period of Test Plan development.

## **SECTION III: SPECIFICATIONS AND EVALUATIONS**

### **SPECIFICATIONS**

#### BUSINESS RULES/FUNCTIONS

* All testers must be a part of Group I.
* All testers are required to develop 2-3 test cases.
* All testers are required to execute between 6 and 9 (dependent on overall number) tests that are not their own.

#### SOFTWARE FUNCTIONS

See [Software Description](#_SOFTWARE_DESCRIPTION).

#### FUNCTIONAL REQUIREMENTS/TEST SUITES

|  |  |  |  |
| --- | --- | --- | --- |
| Suite | Function | Name | Description |
| **StartUI**  **This suite looks at starting the game and interacting with the UI that starts/loads the game.** | | | |
|  | A1.0 | Android-Load | Once icon is clicked from general screen, game loads. |
|  | I1.0 | Apple-Load | Once icon is clicked from general screen, game loads. |
|  | O1.0 | Online-Load | Once navigated to, game loads. |
|  | S1.0 | Steam-Load | Once game is downloaded, icon is clicked and game loads. |
|  |  |  |  |
|  | A1.1 | Android-Start | Start button prompts creation/load of game. |
|  | I1.1 | Apple-Start | Start button prompts creation/load of game. |
|  | O1.1 | Online-Start | Start button prompts creation/load of game. |
|  | S1.1 | Steam-Start | Start button prompts creation/load of game. |
|  |  |  |  |
|  | A1.2 | Android-NGame | Clicking New game slot creates new game. |
|  | I1.2 | Apple-NGame | Clicking New game slot creates new game. |
|  | O1.2 | Online-NGame | Clicking New game slot creates new game. |
|  | S1.2 | Steam-NGame | Clicking New game slot creates new game. |
|  |  |  |  |
|  | A1.3 | Android-LGame | Clicking pre-existing game, loads saved game. |
|  | I1.3 | Apple-LGame | Clicking pre-existing game, loads saved game. |
|  | O1.3 | Online-LGame | Clicking pre-existing game, loads saved game. |
|  | S1.3 | Steam-LGame | Clicking pre-existing game, loads saved game. |
|  |  |  |  |
|  | A1.4 | Android-Diff | Choosing Difficulty sets difficulty (repeat for casual, normal, veteran). |
|  | I1.4 | Apple-Diff | Choosing Difficulty sets difficulty (repeat for casual, normal, veteran). |
|  | O1.4 | Online-Diff | Choosing Difficulty sets difficulty (repeat for casual, normal, veteran). |
|  | S1.4 | Steam-Diff | Choosing Difficulty sets difficulty (repeat for casual, normal, veteran). |
| **Tutorial**  **This suite tests the viability of the tutorial and makes sure crucial points are explored and can be completed. Some of the tests here carry onward.** | | | |
|  | A2.0 | Android-TutStart | Clicking “Start Here” starts the tutorial. |
|  | I2.0 | Apple-TutStart | Clicking “Start Here” starts the tutorial. |
|  | O2.0 | Online-TutStart | Clicking “Start Here” starts the tutorial. |
|  | S2.0 | Steam-TutStart | Clicking “Start Here” starts the tutorial. |
|  |  |  |  |
|  | A2.1.y | Android-TutInst | Tutorial plays after completing instructions. |
|  | A2.1.n | Android-TutSkip | Tutorial plays if instructions are skipped. |
|  | I2.1.y | Apple-TutInst | Tutorial plays after completing instructions. |
|  | I2.1.n | Apple-TutSkip | Tutorial plays if instructions are skipped. |
|  | O2.1.y | Online-TutInst | Tutorial plays after completing instructions. |
|  | O2.1.n | Online-TutSkip | Tutorial plays if instructions are skipped. |
|  | S2.1.y | Steam-TutInst | Tutorial plays after completing instructions. |
|  | S2.1.n | Steam-TutSkip | Tutorial plays if instructions are skipped. |
|  |  |  |  |
|  | A2.2.w | Android-TutW | Tutorial can be won, prompts onward. |
|  | A2.2.l | Android-TutL | Tutorial can be lost, prompts redo. |
|  | I2.2.w | Apple-TutW | Tutorial can be won, prompts onward. |
|  | I2.2.l | Apple-TutL | Tutorial can be lost, prompts redo. |
|  | O2.2.w | Online-TutW | Tutorial can be won, prompts onward. |
|  | O2.2.l | Online-TutL | Tutorial can be lost, prompts redo. |
|  | S2.2.w | Steam-TutW | Tutorial can be won, prompts onward. |
|  | S2.2.l | Steam-TutL | Tutorial can be lost, prompts redo. |
|  |  |  |  |
|  | A2.3 | Android-PopUp | Tutorial Popups display correctly/timely. |
|  | I2.3 | Apple-PopUp | Tutorial Popups display correctly/timely. |
|  | O2.3 | Online-PopUp | Tutorial Popups display correctly/timely. |
|  | S2.3 | Steam-PopUp | Tutorial Popups display correctly/timely. |
|  |  |  |  |
|  | A2.4 | Android-TutRein | Reinforcements can only be placed once prompted. |
|  | I2.4 | Apple-TutRein | Reinforcements can only be placed once prompted. |
|  | O2.4 | Online-TutRein | Reinforcements can only be placed once prompted. |
|  | S2.4 | Steam-TutRein | Reinforcements can only be placed once prompted. |
| **Currency**  **This section looks at how the game treats currency types in game and how they apply as well as when microtransactions are activated** | | | |
|  | A3.1.inc | Android-MoneyInc | Money appropriately increases on enemy death or tower destruction. |
|  | A3.1.dec | Android-MoneyDec | Money appropriately decreases on towers bought. |
|  | I3.1.inc | Apple-MoneyInc | Money appropriately increases on enemy death or tower destruction. |
|  | I3.1.dec | Apple-MoneyDec | Money appropriately decreases on towers bought. |
|  | O3.1.inc | Online-MoneyInc | Money appropriately increases on enemy death or tower destruction. |
|  | O3.1.dec | Online-MoneyDec | Money appropriately decreases on towers bought. |
|  | S3.1.inc | Steam-MoneyInc | Money appropriately increases on enemy death or tower destruction. |
|  | S3.1.dec | Steam-MoneyDec | Money appropriately decreases on towers bought. |
|  |  |  |  |
|  | A3.2.inc | Android-GemInc | Gems increase on win of level |
|  | A3.2.dec | Android-GemDec | Gems decrease when powerup bought |
|  | I3.2.inc | Apple-GemInc | Gems increase on win of level |
|  | I3.2.dec | Apple-GemDec | Gems decrease when powerup bought |
|  | O3.2.inc | Online-GemInc | Gems increase on win of level |
|  | O3.2.dec | Online-GemDec | Gems decrease when powerup bought |
|  | S3.2.inc | Steam-GemInc | Gems increase on win of level |
|  | S3.2.dec | Steam-GemDec | Gems decrease when powerup bought |
|  |  |  |  |
|  | A3.3.inc | Android-CoinInc | Upgrade coin increase on win of level |
|  | A3.3.dec | Android-CoinDec | Upgrade coin decreases on upgrade bought. |
|  | I3.3.inc | Apple-CoinInc | Upgrade coin increase on win of level |
|  | I3.3.dec | Apple-CoinDec | Upgrade coin decreases on upgrade bought. |
|  | O3.3.inc | Online-CoinInc | Upgrade coin increase on win of level |
|  | O3.3.dec | Online-CoinDec | Upgrade coin decreases on upgrade bought. |
|  | S3.3.inc | Steam-CoinInc | Upgrade coin increase on win of level |
|  | S3.3.dec | Steam-CoinDec | Upgrade coin decreases on upgrade bought. |
|  |  |  |  |
|  | A3.4 | Android-HeroBuy | Clicking a non-free hero prompts appropriate microtransaction options. |
|  | I3.4 | Apple-HeroBuy | Clicking a non-free hero prompts appropriate microtransaction options. |
|  | O3.4 | Online-HeroBuy | Clicking a non-free hero prompts appropriate microtransaction options. |
| **Heroes**  **This section looks at the basic makeup of the first 3 heroes (these are the 3 free heroes available in free versions of the game without microtransactions)** | | | |
|  | H1.0 | Hero1-Unlock | Hero 1 unlocks at appropriate point. |
|  | H1.1 | Hero1-Attack | Attack appropriate to damage chart. |
|  | H1.2 | Hero1-Defense | Defense appropriate to defense chart. |
|  | H1.3 | Hero1-MoveSp | Movement speed appropriate to move chart. |
|  | H1.4 | Hero1-MoveCl | Hero appropriately follows click instructions. |
|  | H1.5 | Hero1-Death | Hero dies after appropriate amount of damage taken. |
|  | H1.6 | Hero1-Respawn | Hero respawns at correct spot after correct time. |
|  | H1.7 | Hero1-Spawn | Hero correctly spawns at defense point on map. |
|  |  |  |  |
|  | H2.0 | Hero2-Unlock | Hero 2 unlocks at appropriate point. |
|  | H2.1 | Hero2-Attack | Attack appropriate to damage chart. |
|  | H2.2 | Hero2-Defense | Defense appropriate to defense chart. |
|  | H2.3 | Hero2-MoveSp | Movement speed appropriate to move chart. |
|  | H2.4 | Hero2-MoveCl | Hero appropriately follows click instructions. |
|  | H2.5 | Hero2-Death | Hero dies after appropriate amount of damage taken. |
|  | H2.6 | Hero2-Respawn | Hero respawns at correct spot after correct time. |
|  | H2.7 | Hero2-Spawn | Hero correctly spawns at defense point on map. |
|  |  |  |  |
|  | H3.0 | Hero3-Unlock | Hero 3 unlocks at appropriate point. |
|  | H3.1 | Hero3-Attack | Attack appropriate to damage chart. |
|  | H3.2 | Hero3-Defense | Defense appropriate to defense chart. |
|  | H3.3 | Hero3-MoveSp | Movement speed appropriate to move chart. |
|  | H3.4 | Hero3-MoveCl | Hero appropriately follows click instructions. |
|  | H3.5 | Hero3-Death | Hero dies after appropriate amount of damage taken. |
|  | H3.6 | Hero3-Respawn | Hero respawns at correct spot after correct time. |
|  | H3.7 | Hero3-Spawn | Hero correctly spawns at defense point on map. |
|  |  |  |  |
|  | H4.0 | Hero-Select | Heroes can only be selected if appropriately unlocked |
|  | H5.0 | Hero-Other | If on mobile platform, other hero selected prompts microtransaction. |
|  |  |  |  |
|  | H6.0 | Hero-Deselect | Hero can be deselected and level run without any hero. |
| **Tower Construction**  **This section looks at if towers can be built and how they upgrade and destroy.** | | | |
|  | T1.1 | Tmilitia-build | Militia can be built (with adequate money). |
|  | T1.2 | Tmilitia-2 | Militia can be upgraded once. |
|  | T1.3 | Tmilitia-3 | Militia can be upgraded second time. |
|  | T1.4.1.0 | Tmilitia-Holy | Militia can be upgraded from 3 to Holy Order. |
|  | T1.4.1.1 | Tmilitia-HolyHL | Healing Light can be upgraded x3. |
|  | T1.4.1.2 | Tmilitia-HolySoV | Shield of Valor can be upgraded x3. |
|  | T1.4.1.3 | Tmilitia-HolyHS | Holy Strike can be upgraded x3. |
|  | T1.4.2.0 | Tmilitia-Barb | Militia can be upgraded from 3 to Barbarian hall. |
|  | T1.4.2.1 | Tmilitia-BarbAxes | More Axes can be upgraded x3. |
|  | T1.4.2.2 | Tmilitia-BarbWhirl | Whirlwind Attack can be upgraded x3. |
|  | T1.4.2.3 | Tmilitia-BarbThrow | Throwing Axes can be upgraded x3. |
|  | T1.5 | Tmilitia-Destroy | Militia can be destroyed for appropriate coin. |
|  |  |  |  |
|  | T2.1 | Tarcher-build | Archer can be built (with adequate money). |
|  | T2.2 | Tarcher-2 | Archer can be upgraded once |
|  | T2.3 | Tarcher-3 | Archer can be upgraded second time |
|  | T2.4.1.0 | Tarcher-Rang | Archer can be upgraded from 3 to Rangers. |
|  | T2.4.1.1 | Tarcher-RangPA | Poison Arrow can be upgraded x3. |
|  | T2.4.1.2 | Tarcher-RangWF | Wrath of Forest can be upgraded x3. |
|  | T2.4.2.0 | Tarcher-Mus | Archer can be upgraded from 3 to Musketeer. |
|  | T2.4.2.1 | Tarcher-MusSn | Sniper Shot can be upgraded x3. |
|  | T2.4.2.2 | Tarcher-MusSh | Shrapnel Shot can be upgraded x3. |
|  | T2.5 | Tarcher-Destroy | Archer can be destroyed for appropriate coin. |
|  |  |  |  |
|  | T3.1 | Tmage-build | Mage can be built (with adequate money). |
|  | T3.2 | Tmage-2 | Mage can be upgraded once. |
|  | T3.3 | Tmage-3 | Mage can be upgraded second time |
|  | T3.4.1.0 | Tmage-Arc | Mage can be upgraded from 3 to Arcane |
|  | T3.4.1.1 | Tmage-ArcDR | Death ray can be upgraded x3. |
|  | T3.4.1.2 | Tmage-ArcTel | Teleport can be upgraded x3. |
|  | T3.4.2.0 | Tmage-Sor | Mage can be upgraded from 3 to Sorcerer |
|  | T3.4.2.1 | Tmage-SorPly | Polymorph can be upgraded x3. |
|  | T3.4.2.2 | Tmage-SorSE | Summon Elemental can be upgraded x3. |
|  | T3.5 | Tmage-Destroy | Mage can be destroyed for appropriate coin. |
|  |  |  |  |
|  | T4.1 | Tbomb-build | Bombard can be built (with adequate money). |
|  | T4.2 | Tbomb-2 | Bombard can be upgraded once. |
|  | T4.3 | Tbomb-3 | Bombard can be upgraded second time. |
|  | T4.4.1.0 | Tbomb-BB | Bombard can be upgraded from 3 to Big Bertha |
|  | T4.4.1.1 | Tbomb-BBML | Missle Launcher can be upgraded x3 |
|  | T4.4.1.2 | Tbomb-BBCL | Cluster Launcher can be upgraded x3 |
|  | T4.4.2.0 | Tbomb-TS | Bombard can be upgraded from 3 to Tesla x104 |
|  | T4.4.2.1 | Tbomb-TSSB | Supercharged Bolt can be upgraded x3 |
|  | T4.4.2.2 | Tbomb-TSO | Overcharged can be upgraded x3 |
|  | T4.5 | Tbomb-Destroy | Bombard can be destroyed for appropriate coin. |
| **Tower Weakness**  **This section looks at the way towers and enemies interact in terms of strengths and weaknesses.** | | | |
|  | TW1.1 | FlyVMil | Militia cannot hit flying enemies |
|  | TW1.2 | FlyVMage | Mage can hit flying enemies |
|  | TW1.3 | FlyVArch | Archer can hit flying enemies |
|  | TW1.4.1 | FlyVBomb-B | Base bomb cannot hit flying enemies |
|  | TW1.4.2 | FlyVBomb-TS | Tesla can hit flying enemies |
|  |  |  |  |
|  | TW2.0 | MageDef | Enemies with magic defense do not take damage from mage towers |
|  | TW3.0 | PhysDef | Shielded enemies take reduced physical damage and greater magic damage |
| **Upgrades**  **This section looks at upgrades and when/how they are purchaseable. This section has many parts that are hard to test their implementation without seeing behind the scenes, therefore those tests are not included in this section but may be added later.**  \*note: all upgrades must have previous upgrade purchased to activate. | | | |
|  | UpA1.1 | ArcherUp-1 | Archer can be upgraded for 1 star |
|  | UpA1.2 | ArcherUp-2 | Archer can be upgraded to eagle Eye for 1 star |
|  | UpA1.3 | ArcherUp-3 | Archer can be upgraded to Piercing Shot for 2 star |
|  | UpA1.4 | ArcherUp-4 | Archer can be upgraded to Far Shots for 2 star |
|  | UpA1.5 | ArcherUp-5 | Archer can be upgraded to Precision for 3 star |
|  |  |  |  |
|  | UpMi2.1 | MilitiaUp-1 | Militia can be upgraded for 1 star |
|  | UpMi2.2 | MilitiaUp-2 | Militia can be upgraded to Better Armor for 1 star |
|  | UpMi2.3 | MilitiaUp-3 | Militia can be upgraded to Improved Deployment for 2 stars |
|  | UpMi2.4 | MilitiaUp-4 | Militia can be upgraded Endurance Training for 2 Stars |
|  | UpMi2.5 | MilitiaUp-5 | Militia can be upgraded to Spiked Armor for 3 stars. |
|  |  |  |  |
|  | UpMa3.1 | MageUp-1 | Mage can be upgraded for 1 star |
|  | UpMa3.2 | MageUp-2 | Mage can be upgraded to Arcane Shatter for 1 star |
|  | UpMa3.3 | MageUp-3 | Mage can be upgraded to Hermetic Study for 2 star |
|  | UpMa3.4 | MageUp-4 | Mage can be upgraded to Empowered Magic for 2 star |
|  | UpMa3.5 | MageUp-5 | Mage can be upgraded to Slow Curse for 3 star |
|  |  |  |  |
|  | UpB4.1 | BombUp-1 | Bomb can be upgraded for 1 star |
|  | UpB4.2 | BombUp-2 | Bomb can be upgraded to range finder for 1 star |
|  | UpB4.3 | BombUp-3 | Bomb can be upgraded to Field Logistics for 2 star |
|  | UpB4.4 | BombUp-4 | Bomb can be upgraded to Industrialization for 3 star |
|  | UpB4.5 | BombUp-5 | Bomb can be upgraded to smart targeting for 3 star |
|  |  |  |  |
|  | UpCom5.1 | CometUp-1 | Comet can be upgraded for 2 star |
|  | UpCom5.2 | CometUp-2 | Comet can be upgraded to Scorched Earth for 2 star |
|  | UpCom5.3 | CometUp-3 | Comet can be upgraded to The Fast and Furious for 3 star |
|  | UpCom5.4 | CometUp-4 | Comet can be upgraded to Blazing Earth for 3 star |
|  | UpCom5.5 | CometUp-5 | Comet can be upgraded to Cataclysm for 3 star |
|  |  |  |  |
|  | UpRe6.1 | ReinforceUp-1 | Reinforcement can be upgraded for 2 star |
|  | UpRe6.2 | ReinforceUp-2 | Reinforcement can be upgraded to Conscripts for 3 star |
|  | UpRe6.3 | ReinforceUp-3 | Reinforcement can be upgraded to Warriors for 3 star |
|  | UpRe6.4 | ReinforceUp-4 | Reinforcement can be upgraded to Legionnaires for 3 star |
|  | UpRe6.5 | ReinforceUp-5 | Reinforcement can be upgraded to Spear Throw for 4 star |
| **Inventory/Shop**  **This section looks at what can be bought from the shop and applied via inventory. All items should be purchaseable and applicable in any level.** | | | |
|  | Inv1.0 | HeartBox | Heart Box can be purchased and used in game |
|  | Inv2.0 | Frozotov | Frozotov can be purchased and used in game |
|  | Inv3.0 | Dynamite | Dynamite can be purchased and used in game |
|  | Inv4.0 | FatBoy | Fat Boy can be purchased and used in game |
|  | Inv5.0 | GoldBag | Gold Bag can be purchased and used in game |
|  | Inv6.0 | ChillWand | Chill Wand can be purchased and used in game |
| **Achievements**  **This section looks at the requirements for achievements. When an achievement is earned, it should pop up as an achievement and integrate with social media.**  **\*Description for all of these “can be achieved and appropriately applied to integrated social media such as google games and Steam/Kongregate achievements.** | | | |
|  | Ac01.0 | ACFirstBlood | First Blood: Kill 1 enemy. |
|  | Ac02.0 | ACDaring | Daring: Call 10 early waves. |
|  | Ac03.0 | ACConstructor | Constructor: Build 30 towers. |
|  | Ac04.0 | ACBloodlust | Bloodlust: Kill 500 enemies. |
|  | Ac05.0 | ACArmageddon | Armageddon: Use Rain of Fire 5 times in a single stage |
|  | Ac06.0 | ACHomeImpr | Home Improvement: Upgrade all basic tower types to level 3. |
|  | Ac07.0 | ACStarry | Starry: Earn 15 stars |
|  | Ac08.0 | ACWhatThat | What’s That?: Open 5 information cards |
|  | Ac09.0 | ACSuperMario | Super Mario: Earn 30 Stars |
|  | Ac10.0 | ACNutsBolts | Nuts and Bolts: Defeat The Juggernaut |
|  | Ac11.0 | ACEngineer | Engineer: Buil 100 towers |
|  | Ac12.0 | ACDeadYeti | Is he Dead Yeti?: Defeat J.T. |
|  | Ac13.0 | ACSlayer | Slayer: Kill 2500 enemies |
|  | Ac14.0 | ACDeathAbove | Death From Above: Kill 100 Enemies with meteor showers |
|  | Ac15.0 | ACTactician | Tactician: Change soldiers’ rally point 200 times |
|  | Ac16.0 | ACSuperstar | Superstar: Earn 45 stars |
|  | Ac17.0 | ACArchitect | The Architect: Build 150 towers |
|  | Ac18.0 | ACTheEnd | This is the End!: Defeat Vez’nan |
|  | Ac19.0 | ACTerminator | Terminator: Kill 10k enemies |
|  | Ac20.0 | ACDieHard | Die Hard Have your soldiers regenerate a total of 50k times |
|  | Ac21.0 | ACGIJoe | G.I.Joe: Train 1,000 soldiers |
|  | Ac22.0 | ACCannonFodder | Cannon Fodder: Send 1000 soldiers to their deaths. |
|  | Ac23.0 | ACFearless | Fearless: Call all waves early in a single mission |
|  | Ac24.0 | ACRealEstate | Real Estate: Sell 30 towers |
|  | Ac25.0 | ACIndecisive | Indecisive: Sell 5 towers in a single mission |
|  | Ac26.0 | ACImpatient | Impatient: Call an early wave within 3 seconds of the last one. |
|  | Ac27.0 | ACForestDip | Forest Diplomacy: Recruit max elves at The Silveroak Outpost. |
|  | Ac28.0 | ACHenderson | Like a Henderson: Free the sasquatch on the Icewind Pass. |
|  | Ac29.0 | ACTwinRiver | Twin River Angler: Catch a fish |
|  | Ac30.0 | ACImpSave | Imperial Saviour: Complete The Citadel with at least 3 imperial guards. |
|  | Ac31.0 | ACSpecialist | Specialist: Build all 8 tower specializations. |
|  | Ac32.0 | AC5050 | 50 Shots 50 Kills: Snipe 50 enemies. |
|  | Ac33.0 | ACToxic | Toxicitiy: Kill 50 enemies with poison damage |
|  | Ac34.0 | ACEntangled | Entangled: Hold 500 or more enemies with Wrath of the Forest |
|  | Ac35.0 | ACDustDust | Dust to Dust!: Disintegrate 50 or more enemies |
|  | Ac36.0 | ACBeamUp | Beam Me Up Scotty: Teleport 250 or more enemies |
|  | Ac37.0 | ACShepherd | Shepherd: Polymorph 50 enemies into sheeps |
|  | Ac38.0 | ACElementalist | Elementalist: Summon 5 rock elementals in any one stage |
|  | Ac39.0 | ACAxeRain | Axe Rain!: Throw 500 or more axes |
|  | Ac40.0 | ACNotEnter | Not Entertained?: Have a single barbarian kill 10 enemies. |
|  | Ac41.0 | ACMedic | Medic!: Have your Paladins heal a total of 7k life. |
|  | Ac42.0 | ACHolyChorus | Holy Chorus: Have your Paladins perform 100 Holy Strikes |
|  | Ac43.0 | ACRocketeer | Rocketeer: Shoot 100 missles |
|  | Ac44.0 | ACClustered | Clustered: Drop 1k or more bomblets. |
|  | Ac45.0 | ACEngNet | Energy Network: Build 4 Tesla towers in any stage |
|  | Ac46.0 | ACACDC | AC/DC Kill 300 enemies with electricity |
|  | Ac47.0 | ACOvino | Ovinophobia: Kill 10 or more sheep with your hands. |
|  | Ac48.0 | ACGrDef | Great Defender: Complete the campaign in normal difficulty |
|  | Ac49.0 | ACHerDef | Heroic Defender: Complete all Heroic stages in Normal difficulty |
|  | Ac50.0 | ACIrDef | Iron Defender: Complete all Iron stages in normal difficulty |
|  | Ac51.0 | ACSupDef | Supreme Defender: Complete the campaign in Hard mode |
|  | Ac52.0 | ACFreeFredo | Free Fredo: Help Fredo Escape |
|  | Ac53.0 | ACSpider | Arachnophobia: Defeat Sarelgaz and its minions |
|  | Ac54.0 | ACOrcsDie | Orcs Must Die: Defeat Gul’Thak and its minions. |
|  | Ac55.0 | ACLumberjack | Lumberjack: Defeat Green Muck and its minions |
|  | Ac56.0 | ACChampLin | Cham. Of Linirea: Train a hero up to level 5 |
|  | Ac57.0 | ACLegLin | Legend of Linirea: Max out a hero |
|  | Ac58.0 | ACTheLaw | I am The Law: Don’t let the Kingpin escape |
|  | Ac59.0 | ACCoolRun | Cool Running: Defeat 10 Troll Pathfinders on Ice |
|  | Ac60.0 | ACScratMeal | Scrat’s Meal: Find the elusive acorn |
|  | Ac61.0 | ACPlantsVTrolls | Plants vs Trolls: Find the 5 legendary lost Ice Shrooms. |
|  | Ac62.0 | ACFeedTroll | Don’t Feed the Troll: Defeat Ulguk-Hai the Troll Warlord |
|  | Ac63.0 | ACDineHell | We Dine in Hell!: Have your soldiers survive 300 demon explosion |
|  | Ac64.0 | ACArmyOne | Army of One: Defeat 9 legions before they replicate |
|  | Ac65.0 | ACHello | Hell-o!: Defeat Moloch the Demon Overlord |
|  | Ac66.0 | ACSpore | Spore: Kill 25 Rotshrooms with no soldiers poisoned. |
|  | Ac67.0 | ACCountOne | Counts as One: Have your Elves deal 10k points of damage |
|  | Ac68.0 | ACSuperMush | Super Mushroom: Defeat Myconid, the Rotten Fungus. |
|  | Ac69.0 | ACTMNT | TMNT (Cowabunga): Find the Ninja Master Rat |
|  | Ac70.0 | ACNevermore | Nevermore: Capture the attention of the mysterious crow |
|  | Ac71.0 | ACNessie | Nessie: Discover the hidden monster underwater |
|  | Ac72.0 | ACRatatouille | Ratatouille: Kill 15 wererats before they sicken any soldier |
|  | Ac73.0 | ACGameCrowns | Game of Crowns: Defeat Lord Blackburn to avoid war between |
| **General**  **This section goes over general buttons and game behaviours not covered in other sections.** | | | |
|  | So1.0 | GenSounds | Audio plays |
|  | So1.1 | MusicOff | Music can be muted and unmuted |
|  | So1.2 | SFXOff | SFX can be muted and unmuted |
|  |  |  |  |
|  | Gr1.0 | MapGraphics | Boat animation on map is smooth/looped |
|  | Gr2.0 | MrGmsGraphics | “More games” continuous bounce smooth |
|  | Gr3.0 | LogoShine | Logo shine animates and continuous |
|  |  |  |  |
|  | Cr1.0 | CreditScroll | Credits scroll on their own |
|  | Cr2.0 | CreditFaster | Credits can be manipulated back and forth |
|  |  |  |  |
|  | Bt1.0 | StartBttn | Start button takes you to slots |
|  | Bt2.0 | CreditBttn | Credit button takes you to credits |
|  | Bt3.0 | XBttn | All X buttons close items |
|  | Bt4.0 | PauseBttn | Pause button in level brings up three toggleable options, restart, quit, and continue (x) buttons. |
|  |  |  |  |
|  | D1.0 | DeleteGame | Pressing x next to created game deletes game and empties slot for new game creation. |
|  |  |  |  |
|  | Gen1.0 | LevelIdle | Level idled stays indefinite and does not send enemies. |
|  | Gen1.1 | EnemySend | Enemy waves launch on click or at end of time |
|  | Gen1.2 | EnemyBuzz | Enemies that penetrate defense cause buzz/heart down. |
|  | Gen1.3 | LevelBeat | Can all levels be beaten? |
|  |  |  |  |

#### TEST PROGRESSION

Test Suites above link like things together that can flow into each other and work interdisciplinary. Achievements are often a byproduct of the other testing.

### **METHODS AND CONSTRAINTS**

#### METHODOLOGY

Testing team is taking a Spiral approach to the process.

Testing Methods include: Black box testing, functional testing, usability testing, conformance testing

#### TEST TOOLS

No specialised test tool will be used for this project. Tests will be recorded and done by hand (without help of automation) and compiled at the end of testing cycle.

#### EXTENT

This test focuses on very shallow testing to make sure the game plays without major errors.

#### DATA RECORDING

Data is recorded and stored in a shared document.

#### CONSTRAINTS

Currently unable to test Windows Phones. Other technology may be lacking depending on team’s hardware.

### **EVALUATION**

#### CRITERIA/DATA REDUCTION

As tests are created and executed, testers are required to take note of bugs or defects to be turned in for final report. Each test member is responsible for their own test cases and executions. Each test case will have ~3 executions meaning duplication is not only possible, but expected.



# **PART III: TEST CASES**

Cases: Nichola Lovell, Adrian Rodriguez, Nicklaus Robins, Patricia Sipes

Execution: Christopher Flores, Nichola Lovell, Adrian Rodriguez, Nicklaus Robins, Patricia Sipes

## **Test Case ID: HDEATH001**

**Test Case Name:** Hero Death (H3.5)

**Component:** HP, AI attack

**Test Case Designer:** Nichola Lovell

**Creation Date**: 11/25/15

**Modified By: Patricia Sipes**

**Modified Date: 11/26/15**

**Requirements Covered:** H3.5: That hero dies/is killable.

**Test Description/Purpose:** To ensure the hero dies when HP reaches zero

**Pre-Test Conditions:** Game application must be active

**Test Steps:**

|  |  |  |  |
| --- | --- | --- | --- |
| **#** | **Description** | **Expected Result** | **Check (√)** |
| **1** | **Start new game and level** | **Game/level starts** |  |
| **2** | **Start new level and spawn enemy wave without building anything.** | **Level/wave 1 begins.** |  |
| **3** | **Hero spawns, place enemy near spawn point for faster encounters/death.** | **The hero spawns and moves to directed location.** |  |
| **4** | **Allow for game to autoplay, add no enforcements or use any specials.** | **Enemies are attacked by hero, hero’s health decreases.** |  |
| **5** | **Let HP reach zero** | **Hero dies** |  |

**Overall Test Status:**

Hero successfully takes damage and dies once health reflects 0.

**Run History:**

|  |  |  |  |
| --- | --- | --- | --- |
| **#** | **Run Date** | **Run By** | **Results** |
| **1** | **11/27/15** | **Nicklaus Robins** | **Pass** |
| **2** | **11/27/15** | **Christopher Flores** | **Pass** |
| **3** | **11/28/15** | **Adrian Rodriguez** | **Pass** |

## **Test Case ID: Money001**

**Test Case Name:** Money from Enemies

**Component:** Kingdom Rush

**Test Case Designer:** Nichola Lovell

**Creation Date**: 11/25/15

**Modified By: N/A**

**Modified Date: N/A**

**Requirements Covered:** A3.1.inc

**Test Description/Purpose:** To ensure the player receives money when killing an enemy

**Pre-Test Conditions:** Game application must be active

**Test Steps:**

|  |  |  |  |
| --- | --- | --- | --- |
| **#** | **Description** | **Expected Result** | **Check (√)** |
| **1** | **Start new level** | **Level starts** |  |
| **2** | **Build tower** | **Tower is built** |  |
| **3** | **Wait for enemy spawn** | **Enemies are spawning** |  |
| **4** | **Towers attack enemy** | **Enemies die** |  |
| **5** | **Money increases after death of enemy** | **Money increases** |  |

**Overall Test Status:**

Enemies are killed by tower and appropriately increase coins.

**Run History:**

|  |  |  |  |
| --- | --- | --- | --- |
| **#** | **Run Date** | **Run By** | **Results** |
| **1** | **11/26/15** | **Patricia Sipes** | **Pass** |
| **2** | **11/27/15** | **Christopher Flores** | **Pass** |
| **3** | **11/27/15** | **Nicklaus Robins** | **Pass** |

## **Test Case ID: TD-001**

**Test Case Name:** Tower Defense 001

**Component: Initial** Building Upgrade

**Test Case Designer:** Nicklaus Robins

**Creation Date:** 11/25/15

**Modified By: Patricia Sipes**

**Modified Date: 11/25/15**

**Requirements Covered:** Upgrades, coin decrease

**Test Description/Purpose:** To ensure buildings upgrade when gold is used to upgrade them.

**Pre-Test Conditions:** Level at least 3 in, to insure that tower is upgradeable and initial coin is enough to use upgrade function immediately.

**Test Steps:**

|  |  |  |  |
| --- | --- | --- | --- |
| **#** | **Description** | **Expected Result** | **Check (√)** |
| **1** | **Select Level** | **Level Selected, Asks what Mode** |  |
| **2** | **Select Story Mode** | **Story mode selected, level begins** |  |
| **3** | **Select buildable plot, and pick tower with an upgradeable option unlocked to build** | **Builds selected tower on plot** |  |
| **4** | **Select tower, click the upgrade icon**  **(Repeat steps for all tower types and upgrades)** | **Appropriate gold decreases and tower is upgraded.** |  |

**Overall Test Status:**

Gold appropriately decreases and tower is upgrade is reflected.

**Run History:**

|  |  |  |  |
| --- | --- | --- | --- |
| **#** | **Run Date** | **Run By** | **Results** |
| **1** | **11/27/15** | **Adrian Rodriguez** | **Pass** |
| **2** | **11/27/15** | **Nichola Lovell** | **Pass** |
| **3** | **11/27/15** | **Christopher Flores** | **Pass** |

## **Test Case ID: TD-002**

**Test Case Name:** Tower Defense 002

**Component: General** Building Towers

**Test Case Designer:** Nicklaus Robins

**Creation Date:** 11/25/15

**Modified By: Patricia Sipes**

**Modified Date: 11/25/15**

**Requirements Covered:** Tower building

**Test Description/Purpose:** To ensure towers are built when the player builds them.

**Pre-Test Conditions:** Game map screen

**Test Steps:**

|  |  |  |  |
| --- | --- | --- | --- |
| **#** | **Description** | **Expected Result** | **Check (√)** |
| **1** | **Select Level** | **Level Selected, Asks what Mode** |  |
| **2** | **Select Story Mode** | **Story mode selected, level begins** |  |
| **3** | **Select buildable plot, and pick tower to build that costs less than current coin count (repeat steps for all tower types)** | **Builds selected tower on plot** |  |

**Overall Test Status:**

Tower costing less than current coin count can be built.

**Run History:**

|  |  |  |  |
| --- | --- | --- | --- |
| **#** | **Run Date** | **Run By** | **Results** |
| **1** | **11/25/15** | **Patricia Sipes** | **Pass** |
| **2** | **11/26/15** | **Nichola Lovell** | **Pass** |
| **3** | **11/28/15** | **Adrian Rodriguez** | **Pass** |

## **Test Case ID: TD-003**

**Test Case Name:** Tower Defense 003

**Component:** Setting Barracks Waypoint

**Test Case Designer:** Nicklaus Robins

**Creation Date:** 11/24/15

**Modified By:**

**Modified Date:**

**Requirements Covered:**

**Test Description/Purpose:** To ensure the barracks tower sets the proper waypoint for the spawned units.

**Pre-Test Conditions:** Game map screen

**Test Steps:**

|  |  |  |  |
| --- | --- | --- | --- |
| **#** | **Description** | **Expected Result** | **Check (√)** |
| **1** | **Select Level** | **Level Selected, Asks what Mode** |  |
| **2** | **Select Story Mode** | **Story mode selected, level begins** |  |
| **3** | **Select buildable plot, and pick barracks tower to build** | **Builds selected barracks on plot** |  |
| **4** | **Select barracks tower, and select waypoint icon** | **Selects waypoint.** |  |
| **5** | **Using mouse (or finger tap), set the waypoint in the available area.** | **Waypoint is set in selected area.** |  |

**Overall Test Status:**

Barracks soldiers change position to waypoint when assigned.

**Run History:**

|  |  |  |  |
| --- | --- | --- | --- |
| **#** | **Run Date** | **Run By** | **Results** |
| **1** | **11/27/15** | **Adrian Rodriguez** | **Pass** |
| **2** | **11/27/15** | **Christopher Flores** | **Pass** |
| **3** | **11/27/15** | **Nichola Lovell** | **Pass** |

## **Test Case ID: AUD001**

**Test Case Name:** Audio Cut On/Off

**Component:** Kings Rush

**Test Case Designer:** Adrian Rodriguez

**Creation Date:** 11/27/15

**Modified By: Patricia Sipes**

**Modified Date: 11/27/15**

**Requirements Covered: Audio**

**Test Description/Purpose:** Testing the Audio Cuts On/Off

**Pre-Test Conditions:** Game Application must have been started. Internet Connection and Java flash

**Test Steps:**

|  |  |  |  |
| --- | --- | --- | --- |
| **#** | **Description** | **Expected Result** | **Check (√)** |
| **1** | **Game Application must have been started.** | **Game Application must have been started.** |  |
| **2** | **Open audio options/settings** | **Audio opens.** |  |
| **3** | **Click audio option to mute.** | **Audio mutes.** |  |
| **4** | **Click Audio On Top left logo** | **Audio unmutes.** |  |

**Overall Test Status:**

Audio successfully mutes and unmutes.

**Run History:**

|  |  |  |  |
| --- | --- | --- | --- |
| **#** | **Run Date** | **Run By** | **Results** |
| **1** | **11/27/15** | **Patricia Sipes** | **Pass** |
| **2** | **11/27/15** | **Nichola Lovell** | **Pass** |
| **3** | **11/27/15** | **Nicklaus Robins** | **Pass** |

## **Test Case ID: Enc002**

**Test Case Name:** Encyclopaedia

**Component:** Game Object Index; Encyclopaedia

**Test Case Designer:** Adrian Rodriguez

**Creation Date:** 11/27/15

**Modified By:**

**Modified Date:**

**Requirements Covered:** Popups

**Test Description/Purpose:** Testing to see if the encyclopaedia pops up appropriately.

**Pre-Test Conditions:** Game Application must have been started. Internet Connection and Java flash

**Test Steps:**

|  |  |  |  |
| --- | --- | --- | --- |
| **#** | **Description** | **Expected Result** | **Check (√)** |
| **1** | **Menu should open/User clicks start** | **Application starts, Choose game save.** |  |
| **2** | **Second GUI is open. Click Encyclopedia** | **should open up, and display Tips/Info page.** |  |
| **3** | **User should be able to click any module** | **The Appropriate info will be displayed** |  |
| **4** | **Module “Towers” is picked** | **Display all the correct info on available towers.** |  |
| **5** | **Module “Goblins” is picked.** | **Displays all correct info on available goblins.** |  |
| **6** | **Module “Tips/Hints” is picked.** | **Display all correct info and tips on game.** |  |

**Overall Test Status:**

Encyclopedia popups appropriately display.

**Run History:**

|  |  |  |  |
| --- | --- | --- | --- |
| **#** | **Run Date** | **Run By** | **Results** |
| **1** | **11/27/15** | **Nichola Lovell** | **Pass** |
| **2** | **11/27/15** | **Nicklaus Robins** | **Pass** |
| **3** | **11/27/15** | **Christopher Flores** | **Pass** |

## **Test Case ID: Achieve003**

**Test Case Name:** Achievements display

**Component:** external GUI

**Test Case Designer:** Adrian Rodriguez

**Creation Date:** 11/27/15

**Modified By:**

**Modified Date:**

**Requirements Covered:**

**Test Description/Purpose:** Testing to ensure that the Achievements are properly displayed when clicked on.

**Pre-Test Conditions:** Game Application must have been started. And User should have achievements unlocked. To be displayed. Internet Connection and Java flash

**Test Steps:**

|  |  |  |  |
| --- | --- | --- | --- |
| **#** | **Description** | **Expected Result** | **Check (√)** |
| **1** | **Menu should open/User clicks start** | **Application starts, Choose game save.** |  |
| **2** | **Second GUI is open. Click Encyclopedia** | **should open up, and display Tips/Info page.** |  |
| **3** | **Trophies will be displayed if unlocked.** | **Info on requirements for ALL achievements.** |  |
| **4** | **Page One Clicked** | **User will be shown all of page One trophies. & info** |  |
| **5** | **Page Two Clicked** | **User will be shown all of page Two trophies. & info.** |  |
| **6** | **Page Three Clicked** | **User will be shown all of page Three trophies. & info.** |  |
| **7** | **Page Four Clicked** | **User will be shown all of page Four trophies. & info** |  |

**Overall Test Status:**

All trophies are shown and displayed.

**Run History:**

|  |  |  |  |
| --- | --- | --- | --- |
| **#** | **Run Date** | **Run By** | **Results** |
| **1** | **11/27/15** | **Nichola Lovell** | **Pass** |
| **2** | **11/27/15** | **Nicklaus Robins** | **Pass** |
| **3** | **11/27/15** | **Christopher Flores** | **Pass** |

## **Test Case ID: A2.1y2w3**

**Test Case Name:** And\_TutPopUps

**Component:** main: UI, tutorial; incidental/rechecks because of nature of test: money inc, gem dec, and winability.

**Test Case Designer:** Patricia Sipes

**Creation Date**: 11/23/15

**Modified By: N/A**

**Modified Date: N/A**

**Requirements Covered:** Tutorials pop up correctly (A2.3), tutorial starts after first set of pop ups (A2.1y), tutorial can be followed, enemies destroyed towers bought(T1.1, T2.1, T3.1, T4.1) and money (A3.1.dec)/gems spent(A3.2.dec), and tutorial level is winnable (A2.2w).

**Test Description/Purpose:** To ensure tutorial is fully functional within level play and externally.

**Pre-Test Conditions:** Game (on android) has been installed, launched, save has been created, tutorial/game start launched. Game should have all three slots open to test the three difficulties (multiple unique saves should have already been established as working correctly).

**Test Steps:**

|  |  |  |  |
| --- | --- | --- | --- |
| **#** | **Description** | **Expected Result** | **Check (√)** |
| 1 | Choose difficulty (repeat x3, for each difficulty) | Button clicked takes you to map with “Start Here” popup. |  |
| 2 | Select “StartHere” | “SouthPort Campaign” dialogue pops up. Popups for “Select play mode here”, “select difficulty”, “start battle”. |  |
| 3 | Click “casual”(select difficulty) three times. | Cycles through difficulty levels and back to casual. |  |
| 4 | Click “to battle” | Loading screen takes you to instructions page. |  |
| 5 | Click next through objective page, tower construction page, basic tower types page, and then click “got it” | All pages are legible, coherent and present. “Got it” takes you from loading to map. |  |
| 6 | Two popups appear (start battle and build here). Click build here and choose defense. | 70 gold is deleted and defense barracks are built |  |
| 7 | Build an archer in the top left corner and mage tower next to that. | Towers are built, you are left with 25 gold. |  |
| 8 | Tap twice to start battle wave (as graphic commands) | Enemies start to spawn, new enemy pop up in left corner prompts clicking. |  |
| 9 | Click new enemy pop up and dismiss. | Opens and closes new enemy page. |  |
| 10 | Continue through three waves (clicking to start new one as old one is dead) | They come, they die. On third click, “Reinforcements” pop up instructs you to use reinforcemnts. |  |
| 11 | Place reinforcements next to soldiers, continue to place them and call next waves until gold reaches 125. | New Enemy and Tip popup appear, make sure each opens and instructions are clear. |  |
| 12 | Buy bomb tower, place below barracks. | 125 gold deducted from total, bomb tower built. |  |
| 13 | Continue to call reinforcements until wave pops up "new” special unlocked “rain of fire”. | Pop up properly displays and clicking to dismiss it takes you back to the game. |  |
| 14 | Use “rain of fire” near spawn point. | Rain of fire rains down fire and decimates enemy forces. |  |
| 15 | Finish off the leftovers and see “Victory Screen” display | Victory screen displays. |  |
| 16 | Click ok and follow the prompt to buy upgrades. | Upgrade screen displays. |  |
| 17 | Spend points equal to 3. | Points diminish, power increases. |  |
| 18 | Exit upgrades | Upgrades is exited, shop now has an exclamation icon prompting user to click. |  |
| 19 | Click icon to store | Store opens and shopkeeper prompts person to buy. |  |
| 20 | Buy dynamite. | Gems are subtracted. Dynamite added to inventory. |  |
| 21 | Exit shop. | Shop exits back to map, no more tutorial prompts |  |

**Overall Test Status:**

Tutorial popups function as expected and tutorial is winnable.

**Run History:**

|  |  |  |  |
| --- | --- | --- | --- |
| **#** | **Run Date** | **Run By** | **Results** |
| **1** | **11/27/15** | **Adrian Rodriguez** | **Pass** |
| **2** | **11/27/15** | **Christopher Flores** | **Pass** |
| **3** | **11/27/15** | **Nichola Lovell** | **Pass** |

## **Test Case ID: Inv0.1, Inv0.2**

**Test Case Name:** InventoryShop

**Component:** transactions, inventory, in game currency handling

**Test Case Designer:** Patricia Sipes

**Creation Date**: 11/23/15

**Modified By: N/A**

**Modified Date: N/A**

**Requirements Covered:** Items buyable only with appropriate currency amounts available.

**Test Description/Purpose:** To ensure store inventory can be purchased and is only purchaseable with the correct amount of in game currency on hand.

**Pre-Test Conditions:** Two games need to be created, one with no gems, one with enough gems to buy all inventory pieces (min. 2549 gems). Game should be loaded and playable.

**Test Steps:**

|  |  |  |  |
| --- | --- | --- | --- |
| **#** | **Description** | **Expected Result** | **Check (√)** |
| 1 | Start save file with no money. | Game starts, takes you to map. |  |
| 2 | Click store | Store opens up and all items are presented for sale. |  |
| 3 | Click on heartbox, and click buy | Clickable. On clicking buy, NPC animation flashes and you’re prompted “you need more gems!” |  |
| 4 | Click on Frozontov, click buy | Clickable. On clicking buy, NPC animation flashes and you’re prompted “you need more gems!” |  |
| 5 | Click on Dynamite, click buy | Clickable. On clicking buy, NPC animation flashes and you’re prompted “you need more gems!” |  |
| 6 | Click on Fatboy, click buy | Clickable. On clicking buy, NPC animation flashes and you’re prompted “you need more gems!” |  |
| 7 | Click on Gold Bag, click buy | Clickable. On clicking buy, NPC animation flashes and you’re prompted “you need more gems!” |  |
| 8 | Click on Chill Wand, Click Buy. | Clickable. On clicking buy, NPC animation flashes and you’re prompted “you need more gems!” |  |
| 9 | Repeat with save that has money. | All items should be purchaseable and added to inventory |  |

**Overall Test Status:**

All items in the store are only purchaseable with the appropriate amount of gems labeled.

**Run History:**

|  |  |  |  |
| --- | --- | --- | --- |
| **#** | **Run Date** | **Run By** | **Results** |
| **1** | **11/27/15** | **Christopher Flores** | **Pass** |
| **2** | **11/27/15** | **Nichola Lovell** | **Pass** |
| **3** | **11/27/15** | **Nicklaus Robins** | **Pass** |



# **PART IV: TEST REPORT**

Patricia Sipes

## **SECTION 1: OVERVIEW OF TEST RESULTS**

* Overview (Paragraph)
  + Tests covered base multi-platform functionality of game from audio to tutorial and achievement GUI. Testing team comprised of 5 people, tests written by 4. Each test was executed 3 times (on top of initial writer’s test), and 5 testers participated in the executions. Minor edits were made to test cases for clarity in repeated tests at later dates, marked in red. All tests were successfully run and no defects were reported.
    - Number of Test performed: 9
    - Number of Defects: 0
    - Requirements Status: Passed
* Test Environment
  + PC1: AR1
    - Manufacturer: Custom
    - Model: Custom
    - Processor: i7-4770k cpu
    - RAM: 32 GB
    - Hard Drive: 4TB
    - Operating System: Windows 7
    - GPU: Nvidia 760
    - Internet Browser: Firefox
    - Game Build: Kongregate
  + PC2: NL
    - Manufacturer: Asus
    - Model: K53E-A1
    - Processor: Intel Core i3, 2.1 GHz
    - RAM: 4 GB
    - Hard Drive: 500 GB
    - Operating System: Windows 7
    - GPU: Intel chipset
    - Internet Browser: Firefox
    - Game Build: Kongregate
  + PC3: NR
    - Manufacturer: Asus
    - Model: Q550
    - Processor: Intel Core i7 4500U, 1.8 GHz
    - RAM: 8 GB
    - Hard Drive: 1 TB
    - Operating System: Windows 8.1
    - GPU: Intel HD Graphics 4400 – 2GB
    - Internet Browser: n/a
    - Game Build: Steam .exe
  + AndroidPhone: PS
    - Manufacturer: Samsung
    - Model: Alpha (Samsung-sm-g850a)
    - OS version: 5.0.2
    - Storage Capacity: 32 GB
    - Game Build: Android version 2.6.5
  + AndroidTablet: PS2
    - Manufacturer: Asus
    - Model: MeMo Pad 7 Me176CX (K013)
    - Processor: Intel atom 1.33 GHz
    - Storage Capacity: 16 GB
    - Operating System: Android 4.4
    - Game Build: Android version 2.6.5
* Recommendation: Game is stable without visible defects through basic functionality on all platforms, no recommendations at this time.

## **SECTION 2: DETAILED TEST RESULTS**

* List of Tests
  + Tester: Nichola Lovell
    - Test I
      * Test ID: HDEATH001
      * Name of Test: Hero Death
      * Status: Pass
      * Associated Requirement(s):H3.5
    - Test II
      * Test ID: Money001
      * Name of Test: Money From Enemies
      * Status: Pass
      * Associated Requirement(s): A3.1.inc
  + Tester: Nicklaus Robins
    - Test I
      * Test ID: TD-001
      * Name of Test: Tower Defense 001
      * Status: Pass
      * Associated Requirement(s): --
    - Test II
      * Test ID: TD-002
      * Name of Test: Tower Defense 002
      * Status: Pass
      * Associated Requirement(s):--
    - Test III
      * Test ID: TD-003
      * Name of Test: Tower Defense 003
      * Status: Pass
      * Associated Requirement(s): --
  + Tester: Adrian Rodriguez
    - Test I
      * Test ID: AUD001
      * Name of Test: Audio Cut On/Off
      * Status: Pass
      * Associated Requirement(s): --
    - Test II
      * Test ID: Enc002
      * Name of Test: Encyclopaedia
      * Status: Pass
      * Associated Requirement(s): --
    - Test III
      * Test ID: Achieve003
      * Name of Test: Achievements Display
      * Status: Pass
      * Associated Requirement(s): --
  + Tester: Patricia Sipes
    - Test I
      * Test ID: A2.1y2w3
      * Name of Test: And\_TutPopUps
      * Status: Pass
      * Associated Requirement(s): A2.1y, A2.2w,A2.3, A3.1.dec, A3.2.dec, T1.1, T2.1, T3.1, T4.1
    - Test II
      * Test ID: Inv0.1, Inv0.2
      * Name of Test: InventoryShop
      * Status: Pass
      * Associated Requirement(s): Inv0.1, Inv0.2

## **SECTION 3: SUMMARY OF DEFECTS**

* List of Defects found or fixed
  + No defects found nor disparities between platform versions.



# **PART V: STATUS REPORTS**

Patricia Sipes, Nichola Lovell

## **STATUS REPORT I**

Meeting: Online conversation, spanning 3 – 11 November. Bulk of conversation on the 11th.

Attendees: Despite attempts to get all members together, Nicklaus Robins, Nichola Lovell and Patricia Sipes were the only members in attendance.

Current Schedule: [See above](#_SCHEDULE_I). Schedule has been fast tracked to try and get project done by second status report date so as to be able to tweak and generally polish following it (or extend as seen fit by group).

Completed: Game was decided upon: *Kingdom Rush*

Notes: Discussions were had mainly over what type of game everyone wanted to do. Airplane was considered, but ultimately dismissed. *Hearthstone* and *Marvel Puzzle Quest* were talked about but ultimately dismissed for requiring too much indepth knowledge and time commitment. Nicklaus Robins brought to vote *Kingdom Rush* by Ironclad Games (Published by Armorgames), which was decided upon for its simple mechanics (it’s a basic tower defense game) and lack of need for ingame purchases to make a difference when testing. Patricia Sipes brought forth that it was equally smart because the game was multiplatformed, meaning that conformance and compatibility testing could be done between systems to ensure a like game. Game is available through Steam, Kongregate, Armorgames, iOS and Android stores.

## **STATUS REPORT II**

Meeting: Online conversation, spanning 11 – 21 November.

Attendees: After having the group meet in person, every member is now accounted for and working to finalize the project.

The members include: Patricia Sipes, Nicklaus Robins, Nichola Lovell, Christopher Flores, and Adrian Rodriguez.   
  
Current Schedule: See [Schedule I](#_SCHEDULE_I). Schedule has been fast tracked to try and get project done by second status report date so as to be able to tweak and generally polish following it (or extend as seen fit by group).  
  
Notes: The project is currently meeting all deadlines that have been set. The Test plan has been completed and is currently being edited. A large chunk of our discussions have been over the assigning of the test cases. The test cases should be completed by each member no later than the 22nd of November for compiling. After the information is compiled, the test cases shall be executed. All the information gathered will be implemented into the final test report.

