

SE 3XA3: Test Report

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Table 1: **Revision History**

| Date | Version | Notes |
|-------------|----------------|-------------------|
| 2016-12-07 | 1.0 | Section 1,2,5,6,9 |
| 2016-12-08 | 1.0 | Section 4,7 |

1 Functional Requirements Evaluation

1.1 Input Testing

| <i>Test Case</i> | <i>Initial State</i> | <i>Input</i> | <i>Expected Result</i> | <i>Result</i> |
|--------------------|----------------------|---------------------------------|------------------------|---------------|
| Run Right | Idle | RIGHT_ARROW_KEY/D_KEY | Player moves right | PASS |
| | Moving Left | RIGHT_ARROW_KEY/D_KEY | Player moves right | PASS |
| Run Left | Idle | LEFT_ARROW_KEY/A_KEY | Player moves left | PASS |
| | Moving Right | LEFT_ARROW_KEY/A_KEY | Player moves left | PASS |
| Stop | Moving Right | No input | Player stops | PASS |
| | Moving Left | No input | Player stops | PASS |
| Jump | Idle | SPACE_BAR | Player jumps | PASS |
| | Moving | SPACE_BAR | Player jumps | PASS |
| | Airborne | SPACE_BAR | Nothing | PASS |
| Fire Blue Portal | Any In-Game State | LEFT_CLICK | Blue Portal | PASS |
| Fire Orange Portal | Any In-Game State | RIGHT_CLICK | Orange Portal | PASS |
| Pause | Any In-Game State | P_KEY | Game is Paused | PASS |
| Quit | Paused | LEFT_CLICK on QUIT | Main Menu shown | PASS |
| Play | Main Menu | LEFT_CLICK on START | Game Begins | PASS |
| Help | Main Menu | LEFT_CLICK on ² HELP | Help Menu shown | PASS |

1.2 Collision Testing

| <i>Test Case Collision Object</i> | <i>Initial State</i> | <i>Condition</i> | <i>Expected Result</i> | <i>Result</i> |
|---|------------------------|-------------------------|--------------------------------------|---------------|
| Wall | Player is moving | Player hits wall | Wall prevents movement | PASS |
| Platform | Player is idle/falling | Player hits Platform | Wall prevents movement | PASS |
| Castle | Player is Moving | Player runs into Castle | Level is won | PASS |
| Score Box | Player is airborne | Player hits score Box | Score increases by 10 | PASS |
| Blue Portal | Player is moving | Player hits portal | Character teleports to orange portal | PASS |
| Orange Portal | Player is moving | Player hits portal | Character teleports to blue portal | PASS |
| Goomba | Player is falling | Foot first Contact | Goomba dies | PASS |
| | Player is idle/moving | Front first contact | Game restarts | PASS |

2 Nonfunctional Requirements Evaluation

Description: The following tests were executed by each member of our development team and a couple colleagues from our faculty. Engineering students were better suited for testing the current state of our project since it is an early development view of the open source game that is being recreated. Each participant was asked to give their honest feedback and suggestions.

2.1 Look and Feel Requirements

1. Game Environment

Results: All testers were able to explore all the game environments without issues.

2. Game Hude/Interface

Results: All testers stated that the location of the counter was not not obstructive in their opinion.

2.2 Usability and Humanity Requirements

1. Ease of Learning

Results: All testers stated the game was easy to play and the controls were easy to learn.

2. Entertainment

Results: All testers stated that the game can be more enjoyable if it were stretched out to a longer period of time and had more gameplay, but is currently too short to provide a good amount of entertainment.

2.3 Performance Requirements

1. Controls/Commands

Results: All testers noticed no delays or malfunction from the controls.

2.4 Operational and Environment Requirements

1. Operating System Support

Results: Each tester was able to run the game on their own operating system. These include Windows and OSX 10.

2.5 Security Requirements

1. Altering Information

Results: No tester indicated any type of alterations done to their current process or files.

2.6 Cultural Requirements

1. Spelling and Grammar

Results: All testers indicated that the game had no spelling or grammar mistakes.

2. Offensive Content

Results: The testers indicated that they found no source of offensive content that would be directed at them or people from another culture.

2.7 Legal Requirements

1. License Adherence

Results: The testers stated that they believe that the game is not breaching its current license.

2.8 Health and Safety Requirements

1. Epileptic Prevention

Results: The testers indicated that they believe that the game would not trigger any epileptic seizures, although it is worth noting that none of the testers has ever had a history of epileptic seizures.

3 Comparison to Existing Implementation

This section will not be appropriate for every project.

4 Unit Testing

| | |
|------------------|--|
| Test Case Name | TPG: Play Game Button |
| Initial State | User is viewing the main menu screen. |
| Input | User left clicks the Play Game button |
| Expected Results | User is taken to the game level and given control of Mario |
| Actual Results | User is taken to the game level and given control of Mario |
| Test Result | Pass |

| | |
|------------------|---|
| Test Case Name | THP: Help Button |
| Initial State | User is viewing the main menu screen |
| Input | User left clicks the Help button |
| Expected Results | User is taken to a screen that lists the controls of the game |
| Actual Results | User is taken to a screen that lists the controls of the game |
| Test Result | Pass |

| | |
|------------------|---|
| Test Case Name | TGP: Game Pause Functionality |
| Initial State | User is in a level playing the game |
| Input | The user presses down either the ESC key or the 'P' key on their keyboard |
| Expected Results | The game is fully paused (game events no longer occur, user can no longer provide inputs, and audio stops). |
| Actual Results | The game is fully paused. |
| Test Result | Pass |

| | |
|------------------|---|
| Test Case Name | TST: In Game User Interface Score Tracker |
| Initial State | User is in a level playing the game |
| Input | User increases their score by collecting coins or killing enemies |
| Expected Results | Score increases by the value associated with coins and enemies |
| Actual Results | Score increases by the value associated with coins and enemies |
| Test Result | Conditional Pass (See next two unit test cases) |

| | |
|------------------|---|
| Test Case Name | TCCIS: Collecting Coins to Increase Score |
| Initial State | User is in a level playing the game |
| Input | User collects a coin by jumping from underneath and hitting a question mark block |
| Expected Results | Score increases by a value of 10 |
| Actual Results | Score increases by a value of 10 |
| Test Result | Pass |

| | |
|------------------|---|
| Test Case Name | TKEIS: Killing Enemies to Increase Score |
| Initial State | User is in a level playing the game |
| Input | User lands on an enemy, killing the enemy |
| Expected Results | Score increases by a value of 50 |
| Actual Results | Score does not increase |
| Test Result | Fail |

| | |
|------------------|-------------------------------------|
| Test Case Name | TKE: Killing Enemies |
| Initial State | User is in a level playing the game |
| Input | User lands on an enemy |
| Expected Results | Enemy is killed (removed from game) |
| Actual Results | Enemy is killed |
| Test Result | Pass |

| | |
|------------------|---|
| Test Case Name | TDE: Dying to Enemies |
| Initial State | User is in a level playing the game |
| Input | User runs into an enemy (Player's current yvalue is less than or equal to Enemy's yvalue) |
| Expected Results | Player is killed (removed from game) and game restarts the level |
| Actual Results | Player is killed and player is placed at the beginning of the level |
| Test Result | Pass |

| | |
|------------------|---|
| Test Case Name | TDF: Dying to Pit Fall |
| Initial State | User is in a level playing the game |
| Input | User falls into a pit fall (Falls off the screen) |
| Expected Results | Player is killed (removed from game) and game restarts the level |
| Actual Results | Player is killed and player is placed at the beginning of the level |
| Test Result | Pass |

| | |
|------------------|--|
| Test Case Name | TFBVH: Firing a Blue Portal on a valid horizontal surface |
| Initial State | User is in a level playing the game |
| Input | Player left clicks on a horizontal surface that has enough space to fit the length of the portal |
| Expected Results | A Blue Portal is placed horizontally on the surface |
| Actual Results | A Blue Portal is placed horizontally on the surface |
| Test Result | Pass |

| | |
|------------------|--|
| Test Case Name | TFBVV: Firing a Blue Portal on a valid vertical surface |
| Initial State | User is in a level playing the game |
| Input | Player left clicks on a vertical surface that has enough space to fit the length of the portal |
| Expected Results | A Blue Portal is placed vertically on the surface |
| Actual Results | A Blue Portal is placed vertically on the surface |
| Test Result | Pass |

| | |
|------------------|--|
| Test Case Name | TFBNH: Firing a Blue Portal on a non-valid horizontal surface |
| Initial State | User is in a level playing the game |
| Input | Player left clicks on a horizontal surface that does not have enough space to fit the length of the portal |
| Expected Results | A Blue Portal is not placed horizontally on the surface |
| Actual Results | A Blue Portal is not placed horizontally on the surface |
| Test Result | Pass |

| | |
|------------------|--|
| Test Case Name | TFBNV: Firing a Blue Portal on a non-valid vertical surface |
| Initial State | User is in a level playing the game |
| Input | Player left clicks on a vertical surface that does not have enough space to fit the length of the portal |
| Expected Results | A Blue Portal is not placed vertically on the surface |
| Actual Results | A Blue Portal is not placed vertically on the surface |
| Test Result | Pass |

| | |
|------------------|---|
| Test Case Name | TFOVH: Firing an Orange Portal on a valid horizontal surface |
| Initial State | User is in a level playing the game |
| Input | Player right clicks on a horizontal surface that has enough space to fit the length of the portal |
| Expected Results | An Orange Portal is placed horizontally on the surface |
| Actual Results | An Orange Portal is placed horizontally on the surface |
| Test Result | Pass |

| | |
|------------------|---|
| Test Case Name | TFOVV: Firing an Orange Portal on a valid vertical surface |
| Initial State | User is in a level playing the game |
| Input | Player right clicks on a horizontal surface that has enough space to fit the length of the portal |
| Expected Results | An Orange Portal is placed vertically on the surface |
| Actual Results | An Orange Portal is placed vertically on the |
| Test Result | Pass |

| | |
|------------------|---|
| Test Case Name | TFONH: Firing an Orange Portal on a non-valid horizontal surface |
| Initial State | User is in a level playing the game |
| Input | Player right clicks on a horizontal surface that does not have enough space to fit the length of the portal |
| Expected Results | An Orange Portal is not placed horizontally on the surface |
| Actual Results | An Orange Portal is not placed horizontally on the surface |
| Test Result | Pass |

| | |
|------------------|---|
| Test Case Name | TFONV: Firing an Orange Portal on a non-valid vertical surface |
| Initial State | User is in a level playing the game |
| Input | Player right clicks on a vertical surface that does not have enough space to fit the length of the portal |
| Expected Results | An Orange Portal is not placed vertically on the surface |
| Actual Results | An Orange Portal is not placed vertically on the surface |
| Test Result | Pass |

| | |
|------------------|--|
| Test Case Name | TMLS: Move Left when there is open space to the left of the character |
| Initial State | User is in a level playing the game, player is grounded or in the air |
| Input | Player presses the 'Left Arrow' key or the 'A' key |
| Expected Results | Character's x velocity becomes negative and character is displaced to the left |
| Actual Results | Character's x velocity becomes negative and character is displaced to the left |
| Test Result | Pass |

| | |
|------------------|---|
| Test Case Name | TMRS: Move Right when there is open space to the right of the character |
| Initial State | User is in a level playing the game, player is grounded or in the air |
| Input | Player presses the 'Right Arrow' key or the 'D' key |
| Expected Results | Character's x velocity becomes positive and character is displaced to the right |
| Actual Results | Character's x velocity becomes positive and character is displaced to the right |
| Test Result | Pass |

| | |
|------------------|---|
| Test Case Name | TMLNS: Move Left when there is no open space to the left of the character |
| Initial State | User is in a level playing the game, player is grounded or in the air |
| Input | Player presses the 'Left Arrow' key or the 'A' key |
| Expected Results | Character's x velocity becomes zero and character is not displaced |
| Actual Results | Character's x velocity becomes zero and character is not displaced |
| Test Result | Pass |

| | |
|------------------|---|
| Test Case Name | TMRNS: Move Right when there is no open space to the right of the character |
| Initial State | User is in a level playing the game, player is grounded or in the air |
| Input | Player presses the 'Right Arrow' key or the 'D' key |
| Expected Results | Character's x velocity becomes zero and character is not displaced |
| Actual Results | Character's x velocity becomes zero and character is displaced |
| Test Result | Pass |

| | |
|------------------|--|
| Test Case Name | TJ: Jump |
| Initial State | User is in a level playing the game and the character is grounded |
| Input | Player presses the 'Up Arrow' key or the W Key |
| Expected Results | Character's y velocity becomes positive and character is displaced upwards |
| Actual Results | Character's y velocity becomes positive and character is displaced upwards |
| Test Result | Pass |

5 Changes Due to Testing

After the testing was complete no urgent fixes that interfered with the requirements were needed to be made.

6 Automated Testing

No automated testing methods were used for the testing of this product.

7 Trace to Requirements

| Tests | Requirements |
|-------|--------------|
| TPG | R1 |
| THB | R1, R2 |
| TGP | R3 |
| TST | R4, R13 |
| TCCIS | R9, R13 |
| TKEIS | R11, R13 |
| TKE | R11 |
| TDE | R10 |
| TDF | R12 |
| TFBVH | R5 |
| TFBVV | R5 |
| TFBNH | R5 |
| TFBNV | R5 |
| TFOVH | R5 |
| TFOVV | R5 |
| TFONH | R5 |
| TFONV | R5 |
| TMLS | R6 |
| TMRS | R6 |
| TMLNS | R6 |
| TMRNS | R6 |
| TH | R7 |

Table 2: Trace between Tests to Requirements

8 Trace to Modules

9 Code Coverage Metrics

No accurate code coverage metrics were achieved with our current test suit since it was all a result of manual and survey testing from other people.