**Testing Plan**

As my project does not allow the user to enter data there are no extreme or boundary data. There is one test with erroneous data where the user attempts to bind multiple actions to one key.

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| Test Number | Test | Purpose | Test Data | Expected Result | Type | Result | Evidence |
| 1 | When the game is started there is a main menu that has buttons:  “Play Game”, “Settings”,  “Quit” | 1.a. | Running app.exe. | The main menu is shown with buttons: “Play Game”,  “Settings”,  “Quit”. | Normal | As expected | 0:00 |
| 2 | When the user selects the “Play Game” button, the level selection screen is displayed | 1.a.i and 1.a.i.(1) | Click the “Play Game” button. | The level selection screen is showed. | Normal | As expected | 0:14 |
| 3 | When the Settings Button is selected the user is presented with an settings menu allowing the user to customise their controls and change the audio output level | 1.a.ii | Click the “Settings” button. | The settings screen is showed which allows the user to customise their controls and change the audio output level. | Normal | As expected | 0:27 |
| 4 | Each action the player can execute will be listed with their respective key to execute that action with option to select a different key | 1.a.ii.(1) | Click the “Right” action button and then press the “P” key, then play the first level and hold the “P” key. | The player moves towards the right of the screen. | Normal | As expected | 0:35 |
| 5 | To prevent the user from binding multiple actions to the same key | 1.a.ii.(1) | Click the “Right” action button and press the “A” key. | The action does not change the key bounded to the “Right” action. | Erroneous | As expected | 0:51 |
| 6 | To allow the user to change the volume of the in-game music | 1.a.ii.(2) | The slider will start at 1/10 and then increase to 2/10, then increase to 3/10, then increase to 5/10, then increase to 7/10, then increase to 9/10 and decrease to 2/10. | The volume for the in-game music is increased. | Normal | As expected | 2:41 |
| 7 | To allow the user to change the volume of the in-game sound effects | 1.a.ii.(3) | The slider will start at 0 and then increase to 2/10, then increase to 10/10. | The volume for the in-game sound effects is increased. | Normal | As expected | 3:18 |
| 8 | To allow the player to move horizontally when grounded | 2.a | Press the “D” key. | The player’s x velocity increases. | Normal | As expected | 3:59 |
| 9 | To allow the player to jump | 2.b | The jump button “W” will be pressed. | The player will jump. | Normal | As expected | 4:38 |
| 10 | When the player presses the jump button a fraction too late and are not on the ground the player can still jump | 2.b.i | The jump button will be pressed after the player has walked off a ledge. | The player will jump. | Normal | As expected | 4:49 |
| 11 | When the user presses the jump button slightly too early the player will still jump the moment they touch the ground | 2.b.ii | The jump button will be pressed before the player lands. | The player will jump. | Normal | As expected | 5:34 |
| 12 | The player will be able to dash in the listed cardinal direction by pressing the movement keys and the dash button in various combinations DASH + (UP, UP+RIGHT, RIGHT, LEFT, UP+LEFT) | 2.c | Each set of dash combinations will be pressed. | The player will dash in the respective direction. | Normal | As expected | 6:04 |
| 13 | The player will also be able to jump off walls when the player is holding the key towards the wall and the jump button is pressed. | 2.d | The player will hold the direction facing into the wall and then the jump button will be pressed. | The player jumps off the wall. | Normal | As expected | 6:47 |
| 14 | Each level will generally increase in difficulty, this would be by combining an increase in the length of the level or by requiring the user to have more precise control over the player by executing more difficult jumps and dashes | 3.a | Each level will be completed sequentially. | See Screenshots. | Normal | As expected | 7:01 |
| 15 | As the user unlocks levels by completing the previous one, the levels that the user has unlocked are saved locally onto the user’s machine so that if the game is closed the user keeps their progress | 4.a | The user try to play Level 2 by clicking the button. The user will then complete Level 1 and enter Level 2. The user will exit the game and then re-open the game. The user will then play Level 2. | At first the user can’t play Level 2 as it has not been unlocked. The user should then be able to play Level 2 once Level 1 is completed. The user should then be able to play Level 2 even after exiting the game. | Normal | As expected | 8:57 |

**User Testing**

As part of my testing, I conducted a user test with one member of my friend group, Noah.

From his test he found that it may be helpful to be able to access the settings menu from the pause menu inside a level. This would be in order to change controls whilst playing through the level.

He also suggested the idea that the controls could also be displayed on the first level while that level has not been completed.

Noah felt there was a noticeable increase in difficulty from the start level to the final level. He feels that this level of difficulty provides a suitable challenge for all players with level 3 being the most difficult.

Noah felt the graphic design was very nostalgic and reminiscent of that in other platformers.

Noah feels that the possibility of changing key binds makes the game more accessible for different users.