# Testing – Marvel Milestone Project 2

Manual Testing

Manual Testing was performed on Google Chrome using the device toggle Tool to ensure the layout was responsive on a range of screen sizes (350x650 to 2160x1440).

Mobile Device Layout (small)

The screen layout for both the Battle and Card Matching pages when viewed on mobile devices is made to be viewable for the player where the layout and modal size are adjusted to fit the screen.

The Battle page will show Spiderman above Green Goblin so it will fit the screen accordingly.

For the Card Matching page, the columns are reduced to 3 to fir more appropriately on the screen.
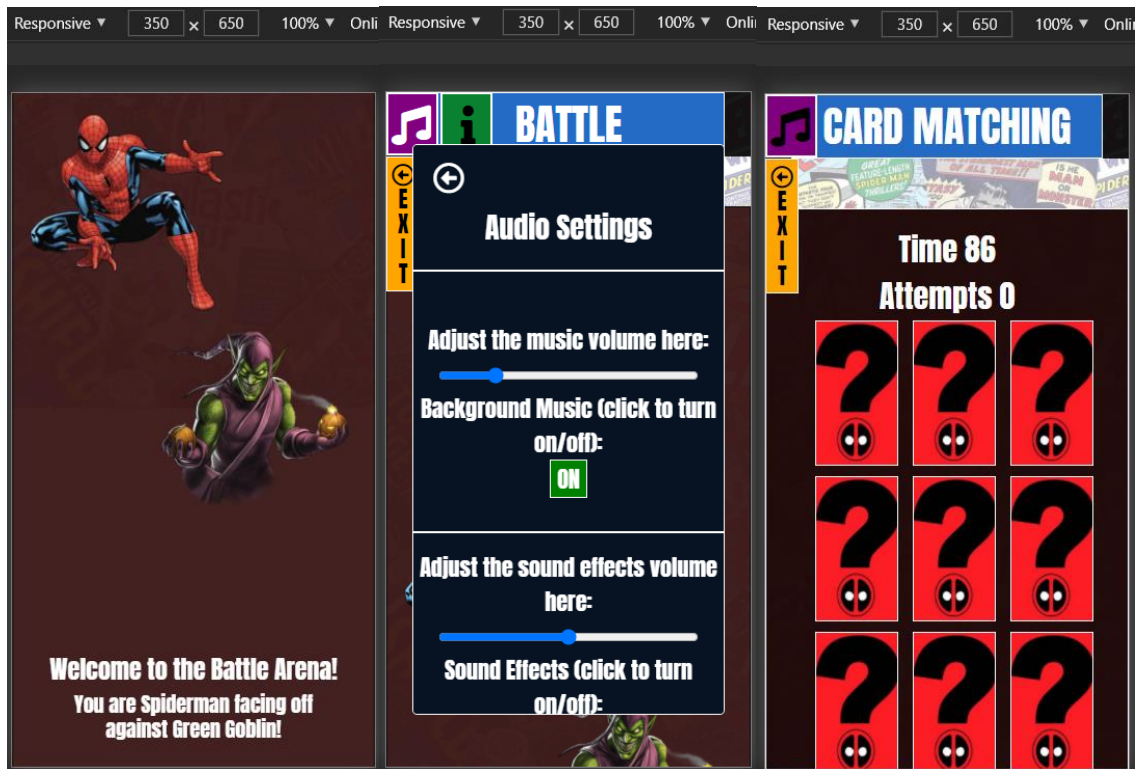
Mouse Hover

Testing the change in appearance when the mouse is hovered over certain buttons and icons assists the user visually. This was implemented for:

- Home page – Main menu Select Game buttons, "Battle" and "Card Matching"
- All pages - Audio Icon
- Battle and Card Matching page – "Exit" button
- Battle page – "Begin Battle" button
- Battle page – Three Spiderman moves - "Punch", "Web-Shooter" and "Web-Swing"
- All pages – Modal "back" button, ON/OFF toggle buttons and sliders.

All the above were tested and are working as intended.

Feature Testing - Battle Game

Tests were done to ensure the battle game functions as intended. This was done on desktop PC and mobile. The mobile device I used is a OnePlus 6, an android device.

Beginning Battle

When the user first loads the Battle page, both Spiderman and Green Goblin stats are hidden. There is also a description welcoming the user and instructions on how to play. There is a "Begin Battle" button to start the game. Once pressed, the background music will start and the stats will appear, as well as Spiderman's moves. This was tested successfully as per the below before and after screenshots.

Before:
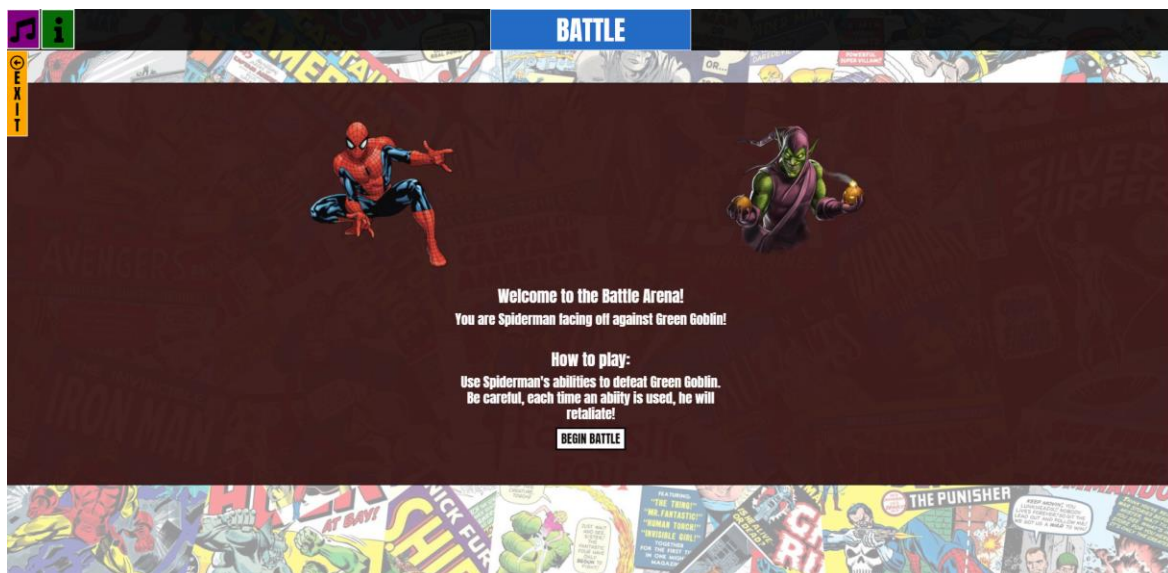
After:
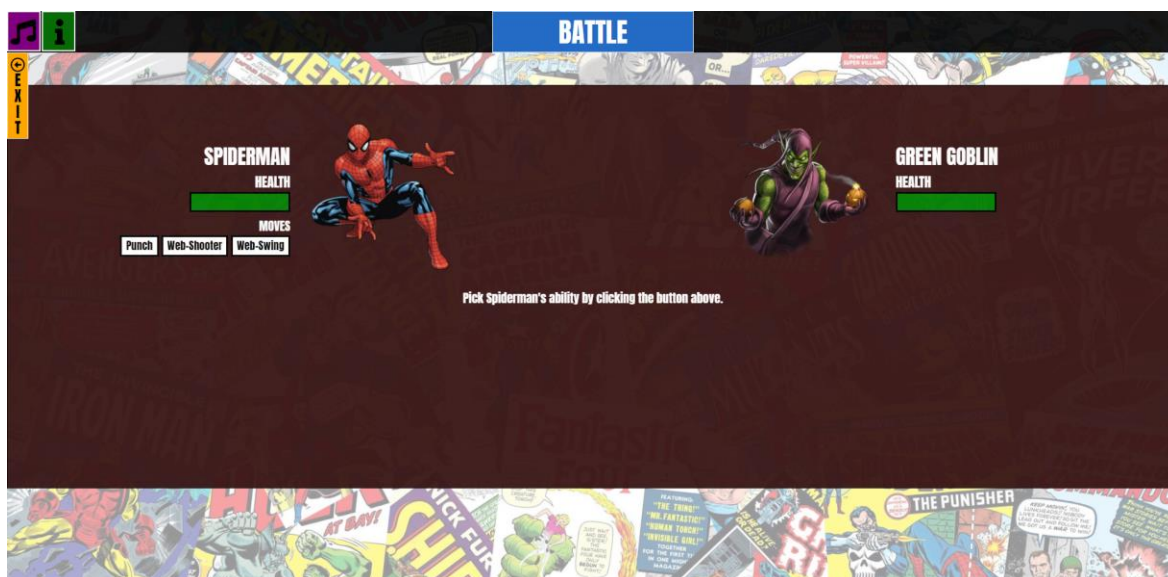
Moves

Testing the damage parameters on each of the three moves of both Spiderman and Green Goblin is to ensure the game is fair and working as intended. Ensuring the abilities are not over powered is important as it will give the user a better experience. I used the abilities 20 times each to ensure that the hit chances are accurate and the damage dealt does not exceed the parameters.

Spiderman:

Move	Hit Chance	Damage	Expected Outcome	Pass/Fail
Punch	70%	5 to 15	Punch will hit between 5 to 15 damage and land 70% of the time	Pass
Web-Shooter	50%	10 to 20	Web-Shooter will hit between 10 to 20 damage and land 50% of the time.	Pass
Web-Swing	40%	15 to 25	Web-Swing will hit between 15 to 25 damage and land 40% of the time.	Pass

Green Goblin:

Move	Hit Chance	Damage	Expected Outcome	Pass/Fail
Glider Sweep	70%	5 to 15	Punch will hit between 5 to 15 damage and land 70% of the time	Pass
Poison Gas	50%	10 to 20	Web-Shooter will hit between 10 to 20 damage and land 50% of the time.	Pass
Pumpkin Bomb	40%	15 to 25	Web-Swing will hit between 15 to 25 damage and land 40% of the time.	Pass

Example screenshot where Punch is within the damage parameter and where Green Goblin's Poison Gas does not land:
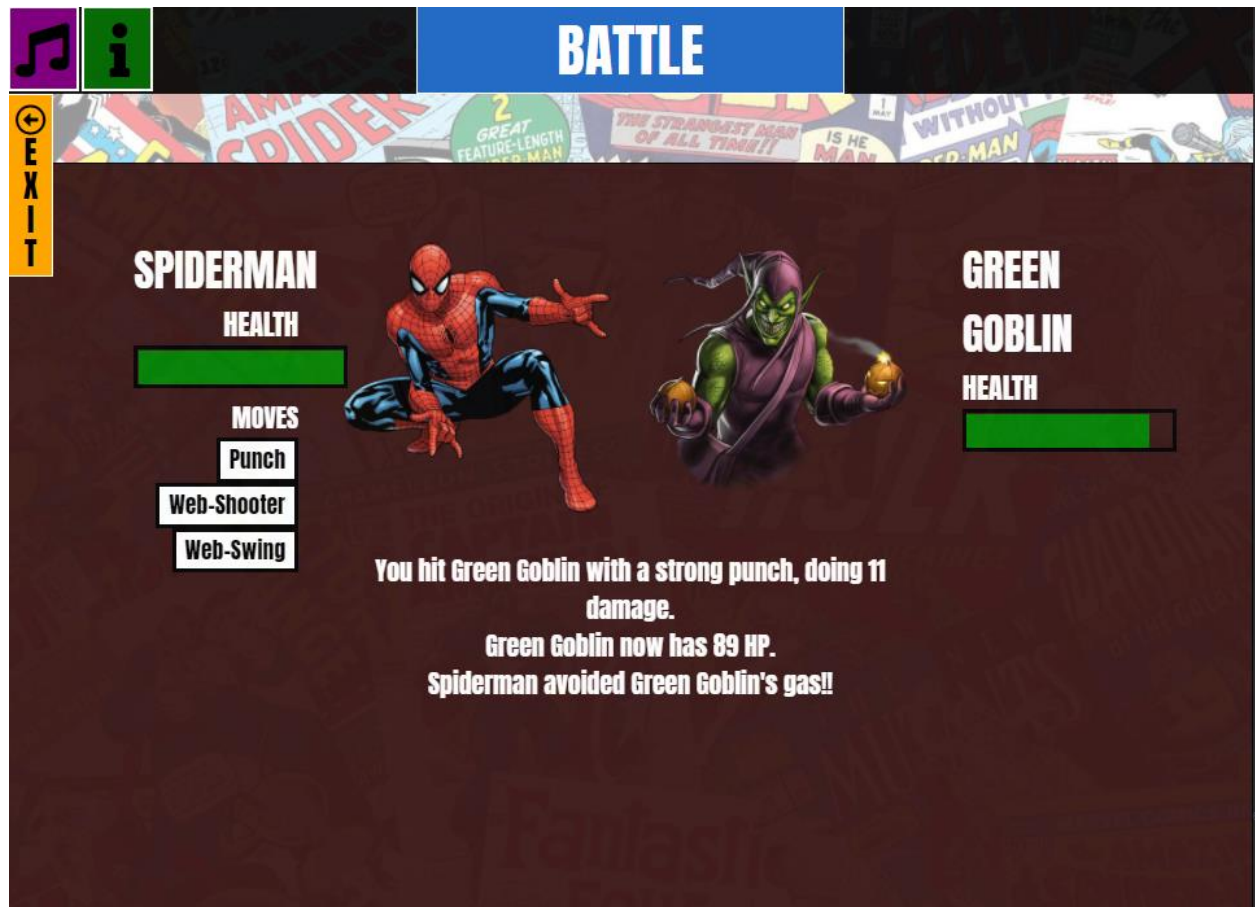
Timings – Animations and Sound Effects

Tests were performed to ensure that the battle flows well. Animations and sound effects enhance the experience and it is important that these are working as intended.

Each time the player clicks one of the three Spiderman abilities, the buttons will become disabled for the animations, sound effects and text updates to execute.

This was tested thoroughly and found no issues for this where the correct animations and sounds were played for each of the 6 unique moves.

The screenshot below shows Spiderman's moves greyed out and disabled so that the player cannot use the abilities until the end of the animation and sound effect. The text will also update correctly to show damage, current health and if an attack has missed.
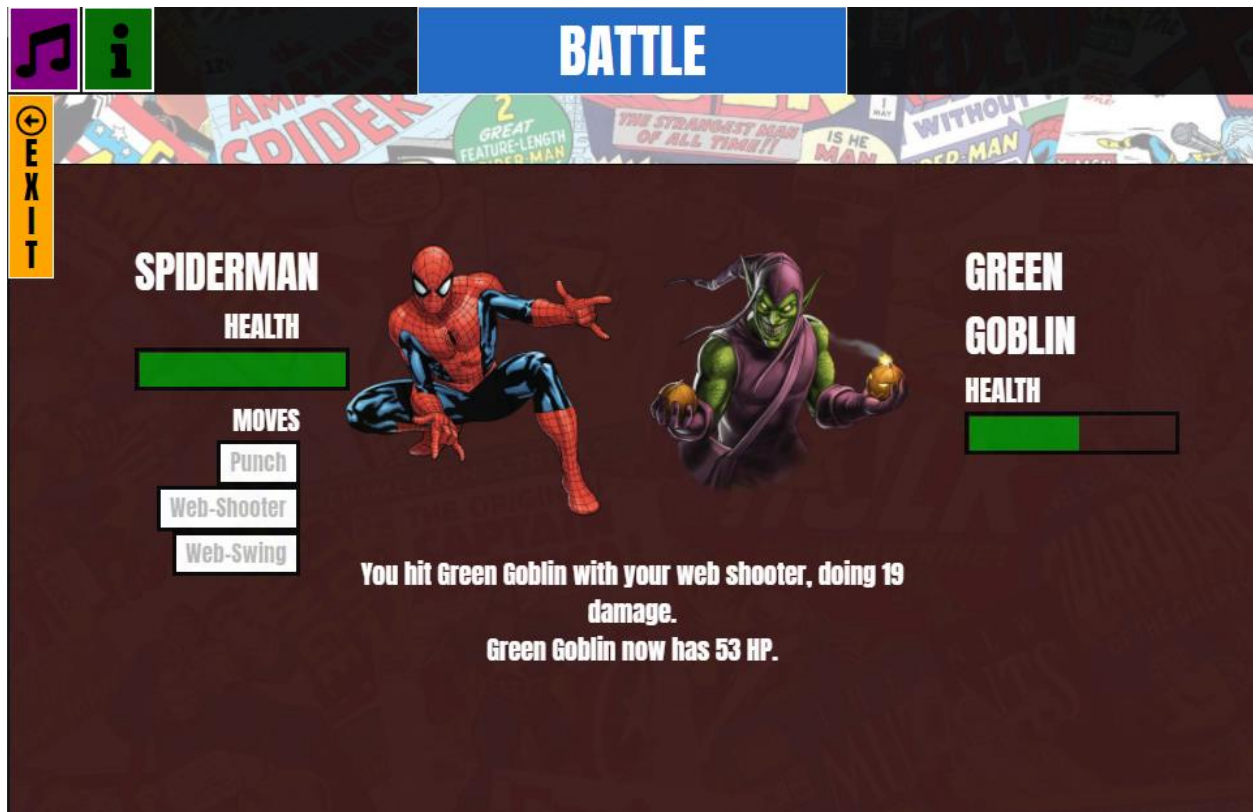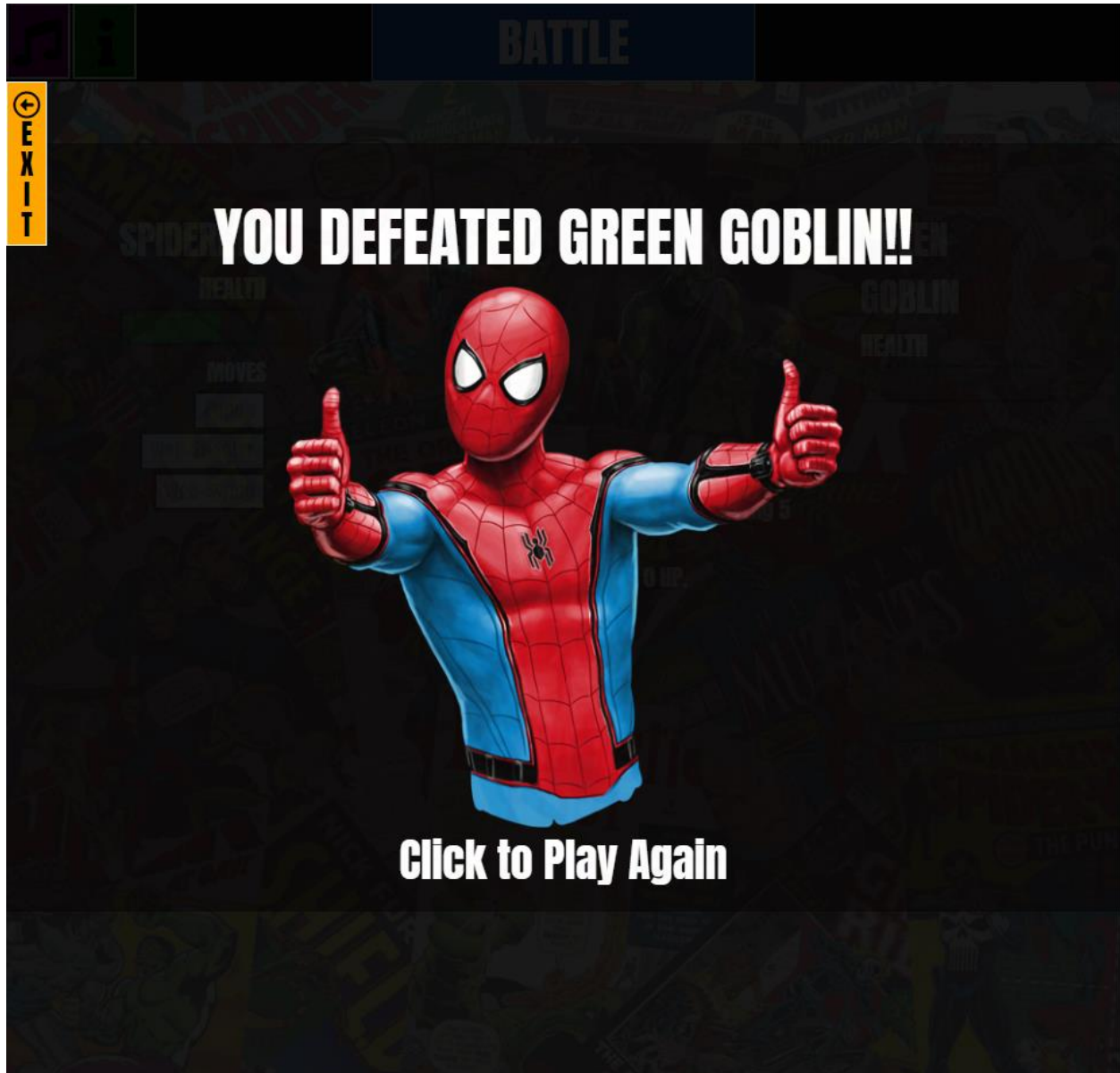
Damage, Health Accuracy and Overlays.

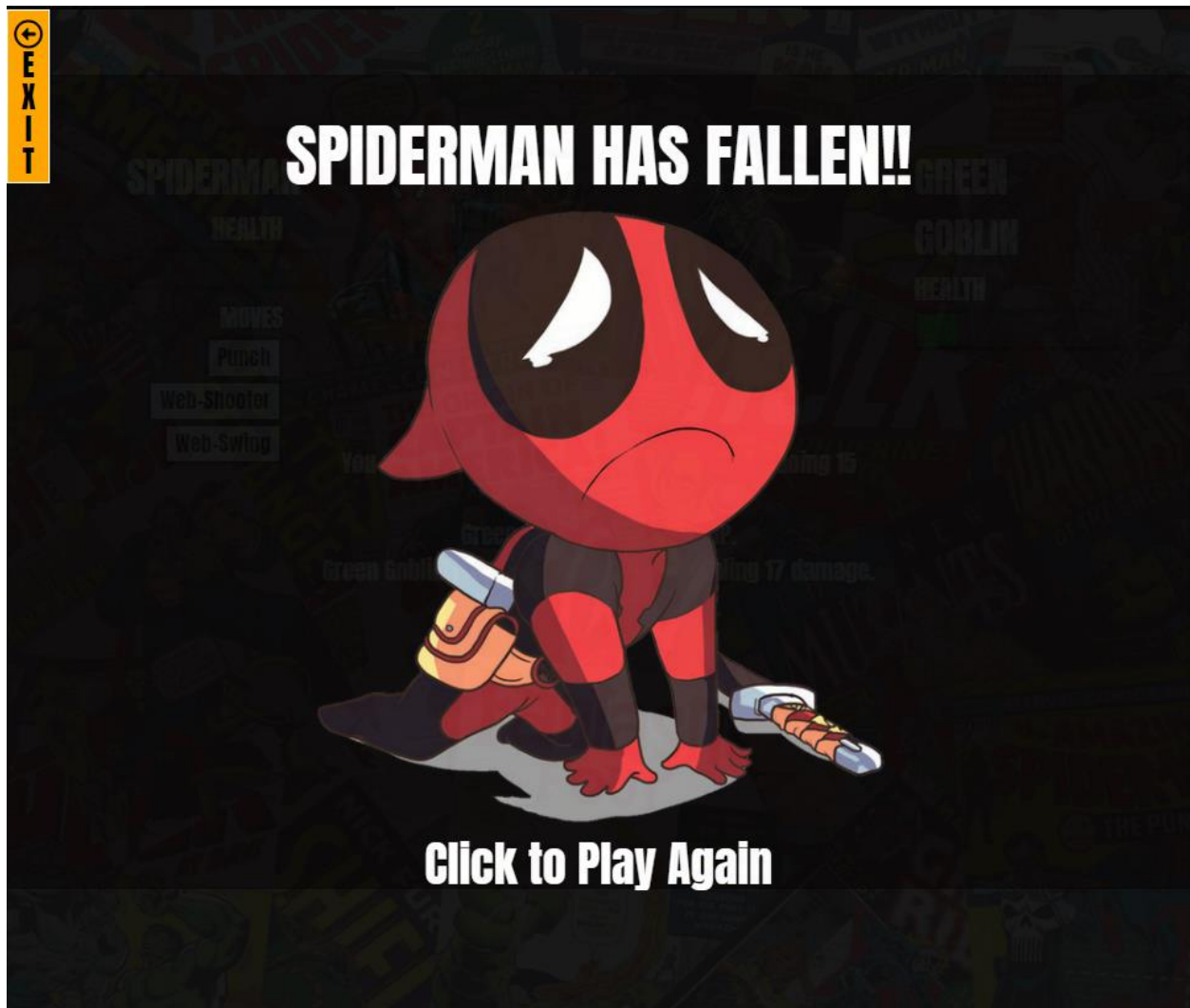The health updates are accurate and in line with all abilities. No issues were found here.

Victory Overlay

When the player has defeated Green Goblin and his health reaches zero, the "Victory" overlay appears as expected:

Loss Overlay

If Spiderman's health reaches zero, the "Loss" overlay appears as expected:

When clicking anywhere on each of these overlays, the game will restart where both Spiderman and Green Goblin Health reverts back to 100.

Feature Testing – Card Matching Game

Tests were done to ensure the Card Matching game functions as intended. This was done on desktop PC and mobile. The mobile device I used is a OnePlus 6, an android device.

Beginning Game

The first screen to be seen on the Card Matching page will be a window describing to the player with instructions on how to play the game. Once the "Play" button is clicked, this window will disappear and the cards will appear, along with the Time, Attempts. The music will also start here. This was tested roughly 10 times with no issues.
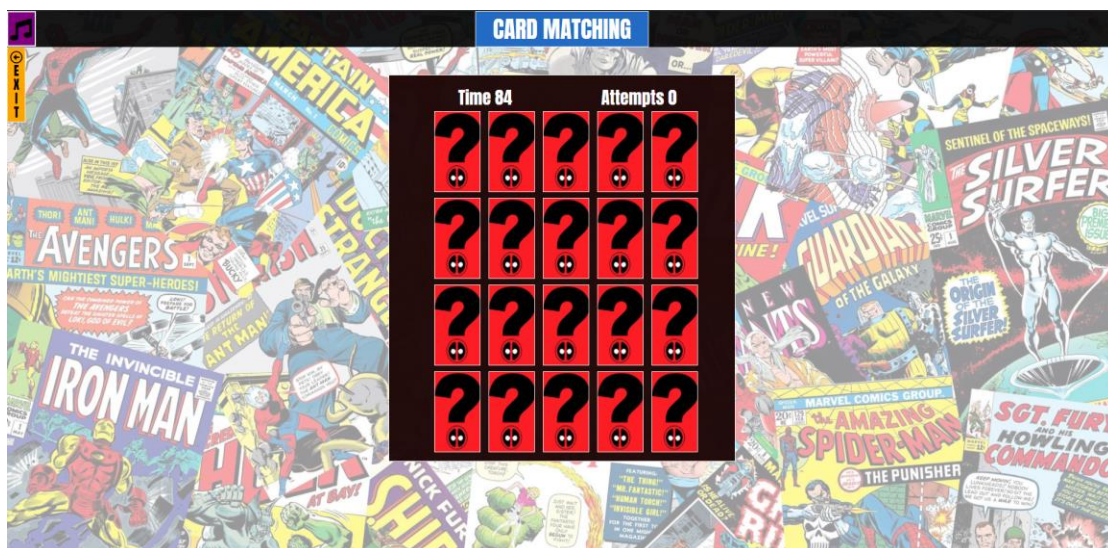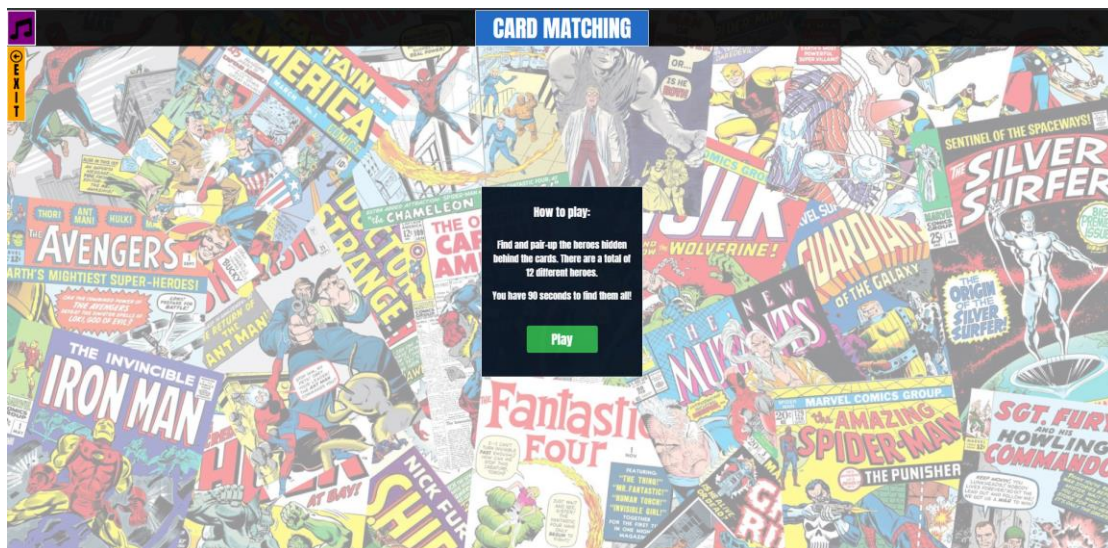
Time and Attempts

The player has 90 seconds to find and match the cards. The timer decreases by 1 for each second correctly.

Each click on a card will increase the Attempts counter by 1. This is also working correctly.

Sounds and Animations

Each click of a card will execute a "flip" sound and when a match is found, a sound effect will also play to notify the player of the successful match.
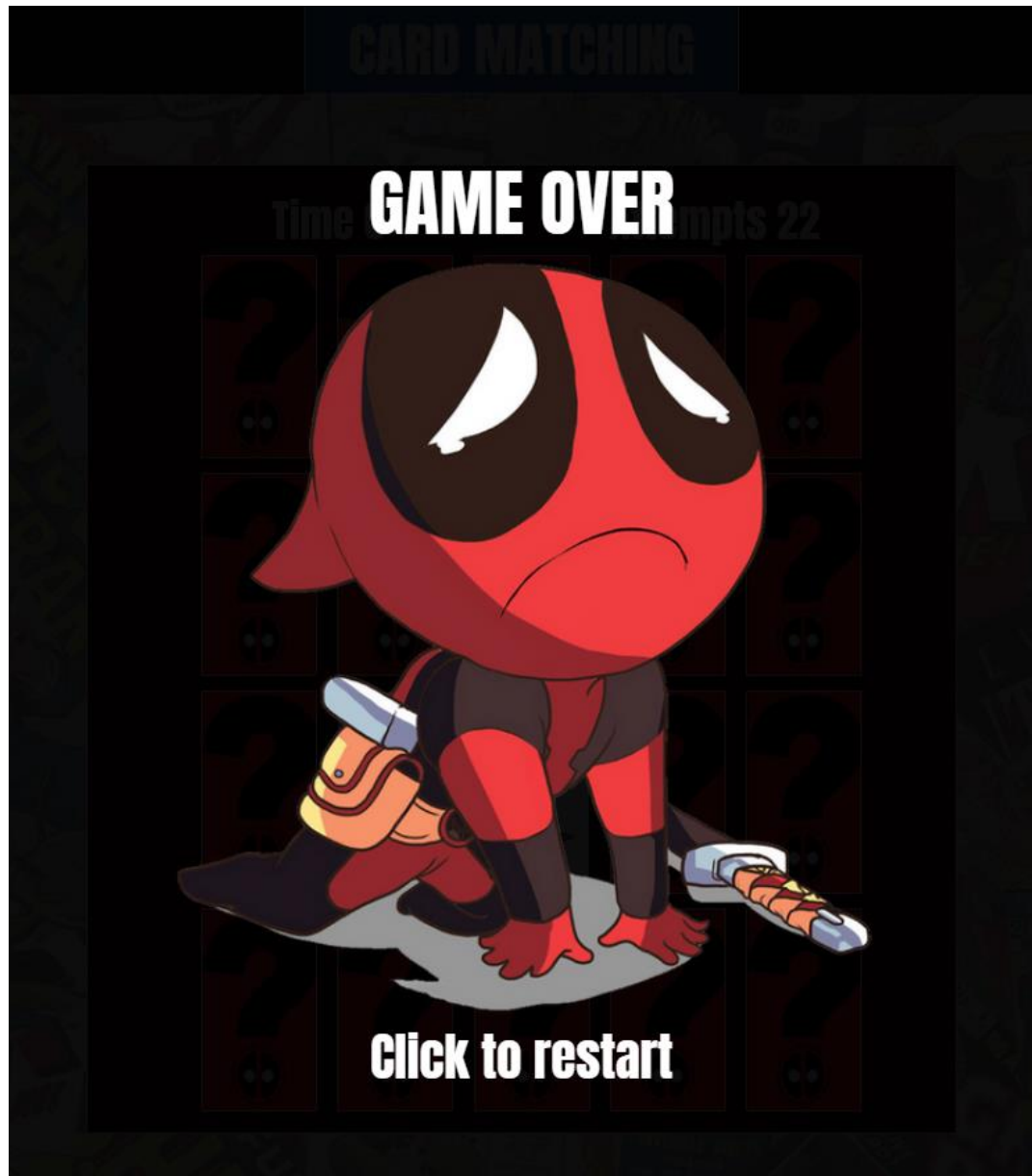
Victory Overlay

When the player has found all matching pairs, the "victory" overlay will appear and also play a short victory sound clip.
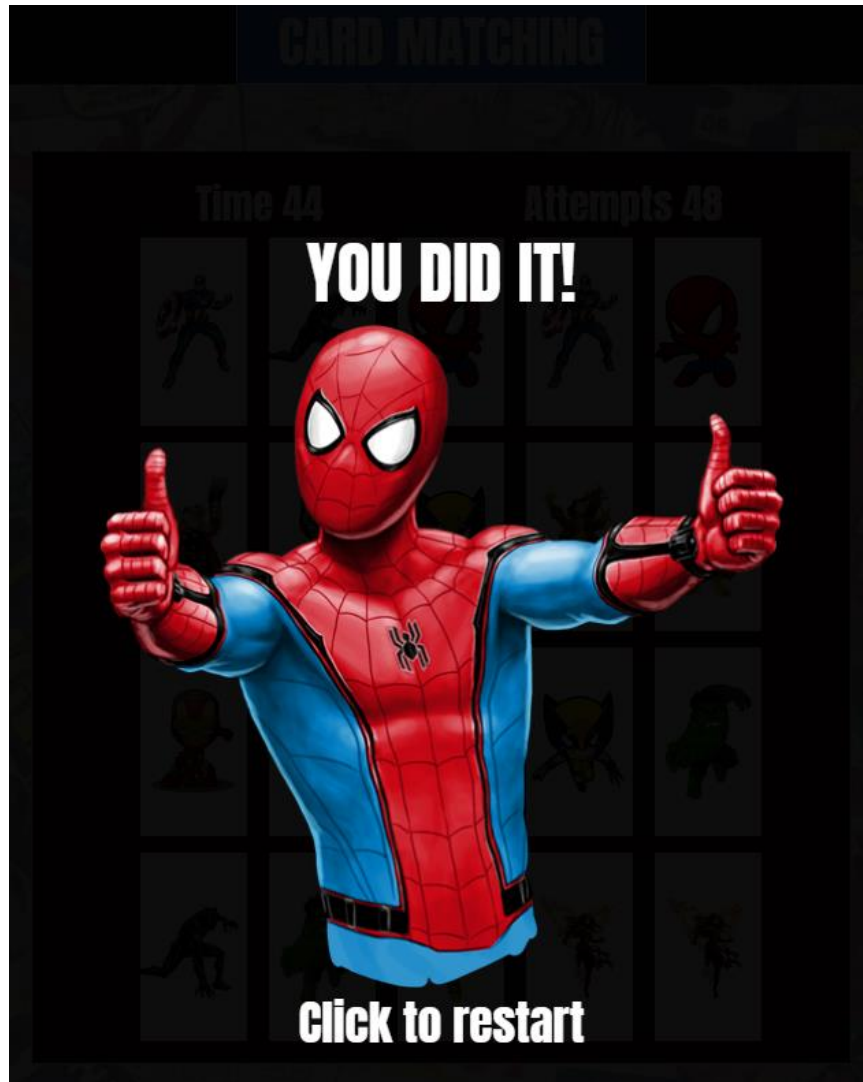
Loss Overlay

When the timer reaches zero, the player has lost the game and the "Loss" overlay will appear along with a sound clip to notify the player.

Restarting the game

When the user clicks either of the two overlays to restart the game, the "Time" and "Attempts" are reverted to their original state. 90 for the Time and 0 for the Attempts. The background music will also restart from the beginning

Audio Settings Modal

The Home, Battle and Card Matching pages all have their Audio Settings Modal. Here the user is able to turn both the music and sound effects on or off. The user will also be able to adjust the volume level for both the music and sound effects. There were no issues found using this feature.

Modal for Battle and Card Matching game:
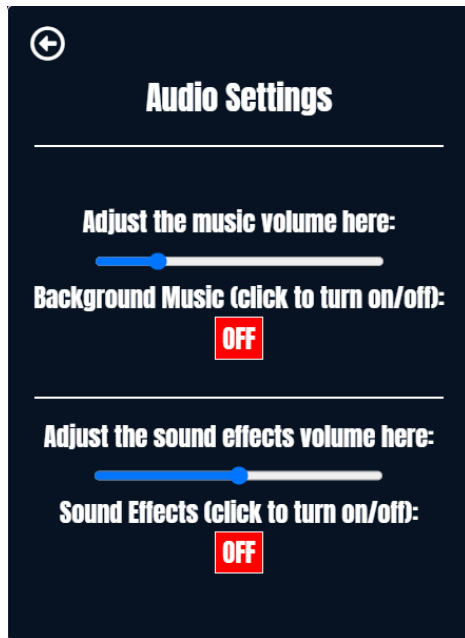
The Home page does not have any sound effects, therefore a setting for this is excluded for the page: