Testing Report

Project Information

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Test Objectives

* Testing Executed:
  + Unit tests
    - RStudio testthat function testing
    - Unit testing within directories and code
  + Functional testing
    - Testing of the actual application once features were added
    - Testing of a workflow once a new feature was implemented

The goal of unit testing was to ensure that all functions were working throughout the project. This was vital as the project was not started from scratch and we needed to ensure that nothing broke while we were added to it. We performed functional testing to ensure that all items were working properly once implemented together.

Test Execution Details

* Used the RStudio/R testthat function to run multiple tests, the man pages for the testthat function were useful in learning how to create the tests and implementing them.
* There were also tests written into the code to verify that things were setup properly and to make sure the functions were not returning empty values.
* The functional testing was performed by navigating through the various pages of the the application to ensure the results were as expected.

Test Execution Results

* Since most of the project was previously written we focused on making unit tests for the new added functions only.
* The RStudio testthat feature ran for quite some time before it completed, there were multiple warning and all tests passed.
* The unit tests were either written into the code by whoever performed that section or it was written into a testthat test.
* R is not typically a programming language that is object oriented, so it does not have a ton of testing methods which made it difficult to run tests like we would in a C or Java program
* The functional tests were performed by all the members of the group periodically to ensure that all pull requests were not interfering with other sections of the code.

Snippet of testing using the testthat library –

Graphical user interface, text, application, chat or text message

Description automatically generated

The code that was being tested –

Graphical user interface, text, application, chat or text message

Description automatically generated

Test Summary

* The testing process for the project was effective. The team performed both unit tests and functional tests to ensure the quality and functionality of the app. The RStudio testthat function was used, as well as tests written directly into the code/directories, and functional testing was performed of the application. While there were some challenges due to the limitations of R as a programming language, the test execution indicates that all tests passed. Overall, the testing process helped ensure the quality and functionality of the project, and it seems that we were able to achieve the testing objectives. With these methods, we were able to uncover minor bugs and reformat our project to ensure a successful outcome when needed.