Software Testing Report

CSV Data Analyzer

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# Unit Tests

| **No** | **Test Case** | **Expected Results** | **Actual Results** |
| --- | --- | --- | --- |
| **1.0** | **Display functions** |  |  |
| 1.1 | Canvas | Window displays | Window displays |
| 1.2 | Options with buttons | Window displays including navigation menu | Error message on menu |
| Window displays, no navigation menu |
| Window displays including navigation menu |
| 1.3 | Search field/date fields, search button, and data grid | Window displays all previous features alongside the search field/date fields, search button and data grid | Window displays all previous features, search field/date fields, search button, no data in the grid |
| **2.0** | **Grid Functions** |  |  |
| 2.1 | Data grid | Fill data grid with test data | Test data fills grid |
| **3.0** | **Search Functions** |  |  |
| 3.1 | Search words | After inputting words, the grid data is replaced with appropriate search results | Error message, the grid is empty |
| Grid fills with correct search results |
| 3.2 | Search words with dates | After inputting words and the date periods, the grid data is replaced with appropriate search results | Grid fills with correct search results |
| **4.0** | **Graph Functions** |  |  |
| 4.1 | Select file window | Select file window displays | Displays window correctly |
| 4.2 | New graph window opens | Window opens | Error message |
| Window opens |
| 4.3 | Graph displays on the window | Graph displays | Error message |
| Graph displays but graph is blurry and unreadable |
| Graph display correctly |

# Coverage Report

1. Users shall be able to input specific time periods and suburbs to refine data analysis.

Using the start\_period\_box and end\_period\_box textboxes (‘textctrl’) from display\_screen.py, they were read by display\_screen\_logic.py to retrieve their data values. After being translated into dates using the datetime function from the datetime import, the application checks if either date values exist. If one doesn’t exist, the search is treated without any dates and reads the grid rows to find the search value. If the previous if statement isn’t successful, it’s assumed both dates exist, and the search function is treated utilised them both. The dates use the ‘host\_since’ field and filters any of the typical search results by the date parameters.

The time periods can filter without any search results, fulfilling the prescribed requirement. A suburb can be inputted into the search field, however, only one at a time may be inputted for the search function to successfully scan the data grid.

Once the values are found, the values are stores in a new grid (‘DataTable’) to replace the old grid, automatically resizing the grid to fit the new values.

1. The app shall include a search feature that allows users to retrieve information from the dataset based on keywords

As mentioned for requirement 1, the search field (‘m\_textCtrl2’, a ‘TextCtrl’) is read by display\_screen\_logic.py to retrieve the data value for the search function event (OnSearch). The application reads each row for any string value containing the search value (‘search\_val’) and stores them into a new grid to replace the original.

This fulfills the requirement, however, the application searches for the full keywords. Only strings that fully match the value are committed (eg. if the value is clean, words like cleaner are not included), causing a problem in the search functionality of the application.

1. The app shall provide visualizations to display the distribution of location, price etc.

This is not fulfilled, however, some graph visualisation for other values was developed. After being ran via the menu button events (RentalsScreen, CleanScreen), display\_screen\_logic.py uses separate python files to run the visualization software, calendar\_dec18\_piechart.py and cleanliness.py respectively. cleanliness.py reads a prescribed file (‘reviews\_dec18.csv’), then using cleanliness keywords that were found to be suitable for the task, these were filtered through each row of the csv file similarly to requirements 1 & 2. The figure was then developed using the .pie function by using ‘names’, ‘values’ and ‘title’. The ‘values’ were concatenated into a total percentage each, then the whole figure was formatted into a .png format to be outputted via a new window created by the root variable using tkinter.

1. The app shall enable users to execute keyword searches in the data.

See requirement 2.

1. The program shall allow the importation of data sets in various formats.

As noted from the previous requirements, only csv files are used by the application, therefore failing this requirement. The application only functions when the appropriate fields are included in the imported file. However, assuming all the requirements for the file are fulfilled, it is possible to import that csv file and run the application as normal.

1. It shall visualize all the pricing displays through graphs.

See requirement 3.

Error handling:

If any error was encountered during development, the problem was first isolated then tested in a controlled environment. By doing this, the problem was able to be diagnosed quickly, then using online support sources, the problem was able to be fixed relatively quickly.

# Requirements Acceptance Testing

| **Software  Requirement No** | **Test** | **Implemented (Full /Partial/ None)** | **Test Results (Pass/ Fail)** | **Comments (for partial implementation or failed test results)** |
| --- | --- | --- | --- | --- |
| 1 | Users shall be able to input specific time periods and suburbs to refine data analysis. | Partial | Pass | Time periods are searchable; suburbs are not |
| 2 | The app shall include a search feature that allows users to retrieve information from the dataset based on keywords. | Full | Pass |  |
| 3 | The app shall provide visualizations to display the distribution of location, price etc. | Partial | Pass | Graphs are utilised for data visualisations; neither distribution of location nor price is visualised |
| 4 | The app shall enable users to execute keyword searches in the data. | Full | Pass |  |
| 5 | The program shall allow the importation of data sets in various formats. | Partial | Pass | Data imports only using a specific format |
| 6 | It shall visualize all the pricing displays through graphs. | Partial | Pass | See requirement 3 comment |