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**Mobile Platform Development – MHI326841-21-B**

**Coursework 1 for Session 2021-2022**

**Department of Computing**

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“I declare that all work submitted for this coursework is the work of alone unless stated otherwise.”

**Signed by Student: Gemma Grant Date: 09/04/2022**

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# GitHub Link

Link to repo: <https://github.com/Gemmag7/mpd_cw>

# APK Link

Link to apk file: <https://github.com/Gemmag7/mpd_cw/blob/master/Documentation/apk/debug/app-debug.apk>

# Screencast-o-matic Link

Link to the screencast-o-matic video: <https://github.com/Gemmag7/mpd_cw/blob/master/Documentation/Grant_Gemma_s2030516.mp4>

# Test Documentation

## Documentation of Functionality and Test Reports

|  |  |
| --- | --- |
| **Traffic Scotland App Testing Schedule:** | |
| **LIST OF TEST CASES** | |
| **TEST NO** | **PURPOSE OF TEST** |
| 1 | Testing to ensure the application runs |
| 2 | Testing that the data in the link is the data that is displayed in the various views provided by the app |
| 3 | Testing that the user can navigate around the app and select the required functionality as identified in the specification |
| 4 | Testing that the functionality required of the features asked for in the specification have been tested. |
| 5 | Testing the behaviour of the application when not connected to the internet or internet connection is lost |

## Test Cases

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **ID** | **Name of Test** | **ACTION** | **EXPECTED OUTCOME** | **ACTUAL OUTCOME** | **PASS/FAIL** | **EVIDENCE** |
| 1.0 | Testing to ensure that the application starts as expected without any issues | Click on the ‘Run app’ button in Android Studio to start the application | The application should load up and app should display in the emulator as expected | The application executes and displays the homepage as expected | PASS | See Figure 1 for evidence. |
| **Summary Test Results for Running the Application:**  The application displays in the browser as expected when it is executed. | | | | | | |

Graphical user interface, text, application

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Figure 1 - The homepage of the application when it is executed

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| --- | --- | --- | --- | --- | --- | --- |
| **ID** | **Name of Test** | **ACTION** | **EXPECTED OUTCOME** | **ACTUAL OUTCOME** | **PASS/FAIL** | **EVIDENCE** |
| 2.1 | Testing that the data in the link is the data that is displayed in the various views provided by the app | Click on the menu items in the navigation side drawer in portrait view | Once user selects the data they wish to see, a listView should be populated with the parsed xl data and be displayed to the user in portrait layout | The application shows the parsed xml data in a listview for 2/3 pages. The current incidents listview does not display data see testID 2.1.3 for more details | PASS AND FAIL |  |
| 2.1.1 | Testing to ensure that the application displays current roadworks in Portrait View | Click on the ‘Current Roadworks’ menu item in the side drawer whilst app is in portrait | The application should display a list of all current roadworks to the user. Phone layout should remain in portrait layout. | The application displays a list of current roadworks whilst still being in portrait mode as expected | PASS | See Figures 2 and 3 for evidence. |
| 2.1.2 | Testing to ensure that the application displays planned roadworks in Portrait View | Click on the ‘Planned Roadworks’ menu item in the side drawer whilst app is in portrait | The application should display a list of all planned roadworks to the user. Phone layout should remain in portrait layout. | The application displays a list of planned roadworks whilst still being in portrait mode as expected | PASS | See Figure 4 and 5 for evidence. |
| 2.1.3 | Testing to ensure that the application displays current incidents in Portrait View | User clicks on the ‘Current Incidents’ menu item in the side drawer whilst in portrait mode | The application should display a listview of all current incidents to the user whilst still being in portrait mode. | The application stops completely after toast message displays and so, no view is displayed. | FAIL | See Figure 4 for more details. |
| 2.1.4 | Testing to ensure that the application displays home page in Portrait View | User clicks on ‘home’ menu item in the side drawer of the app whilst in portrait mode | The application should execute and display the homepage in portrait view | The application runs and displays the homepage in portrait view as expected | PASS | See Figure 9 for evidence. |
| 2.2.1 | Testing to ensure that the application displays current roadworks in landscape View | Click on the ‘current roadworks’ menu item in the side drawer whilst app is in landscape | The application should display a list of all current roadworks to the user. Phone layout should remain in portrait layout. | The application displays a list of current roadworks whilst still being in landscapenmode as expected | PASS | See Figures 10 and 11 for evidence. |
| 2.1.2 | Testing to ensure that the application displays planned roadworks in Portrait View | Click on the ‘Planned Roadworks’ menu item in the side drawer whilst app is in portrait | The application should display a list of all planned roadworks to the user. Phone layout should remain in portrait layout. | The application displays a list of planned roadworks whilst still being in portrait mode as expected | PASS | See Figure 12 and 13 for evidence. |
| 2.1.3 | Testing to ensure that the application displays current incidents in landscape View | User clicks on the ‘Current Incidents’ menu item in the side drawer whilst in landscape mode | The application should display a listview of all current incidents to the user whilst still being in landscape mode. | The application stops completely after toast message displays and so, no view is displayed. | FAIL | See TestID 2.1.3 for error details. |
| 2.1.4 | Testing to ensure that the application displays home page in Portrait View | User clicks on ‘home’ menu item in the side drawer of the app whilst in landscape mode | The application should execute and display the homepage in landscape view | The application runs and displays the homepage in landscape view as expected | PASS | See Figure 14 for evidence. |
| **Summary Test Results for Running the Application:**  The application displays the data only for current and planned roadworks for both portrait and landscape views. The app also failed to load current incidents; this is due to a parsing error of the parseDescription method in the item class. I was unable to fix this error, however, this will be focused on for the next iteration of the development of the application. | | | | | | |

Graphical user interface, text, application

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Figure 2 - Current roadworks list displayed in portrait mode as expected

Graphical user interface, text, application

Description automatically generated

Figure 3 - A more in-depth view of a current roadwork when clicked on in portrait mode

Graphical user interface, application

Description automatically generated

Figure 4 - Planned roadworks list displayed in portrait mode as expected

Graphical user interface, text, application

Description automatically generated

Figure 5 -A more in-depth view of a current roadwork when clicked on in portrait mode

A close-up of a cell phone

Description automatically generated with medium confidence

Figure 6 - Application after 'Current Incidents' menu item is clicked on.

This displays after the application has obtained the data and it has been parsed into an array which can be seen in *Figure 7*.The error message of this issue can be seen in *Figure 8*.

A picture containing text

Description automatically generated

Figure 7 - The parsed xml data in the Logcat showing that the data has been parsed into an arrayList

Text

Description automatically generated

Figure 8 - Error message when current incident is selected

The error message that displays states that the error originates from the Item.java file, specifically the parseDescription() method which parses the startDate and endDate of a roadwork(planned and current). However, this does not apply to current incidents since they have neither a startDate nor an endDate so the currentIncident should be using a different constructor which should only have title and description passed into the Item constructor, however, it appears that the application does not do this. This may be down to the application calling the Item\_Adapter instead of the IncidentAdapter class instead.

Graphical user interface, text, application

Description automatically generated

Figure 9 - Homepage of the application in portrait view

Graphical user interface, text, application, email

Description automatically generated

Figure 10 - Current roadworks listview displayed in landscape layout as expected

Graphical user interface, text, application, email

Description automatically generated

Figure 11 – Current roadworks detailed view displays in landscape view as expected

Graphical user interface, text, application

Description automatically generated

Figure 12 - Planned roadworks listview displays in landscape view as expected

Graphical user interface, text, application, email

Description automatically generated

Figure 13 - Planned roadworks detailed view displays in landscape view as expected

Graphical user interface, text, application

Description automatically generated

Figure 14 - Homepage of application displays in landscape view as expected

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| --- | --- | --- | --- | --- | --- | --- |
| **ID** | **Name of Test** | **ACTION** | **EXPECTED OUTCOME** | **ACTUAL OUTCOME** | **PASS/FAIL** | **EVIDENCE** |
| 3 | Testing that the user can navigate around the app and select the required functionality as identified in the specification | Click on the menu items in the navigation side drawer when app is executed | Once user selects the page they wish to see via menu item, the app should load the page the user wishes to see | The application is able to move to most pages but not all due to an error with loading the current incidents page. See testID 2.1.3 for more details | PASS AND FAIL |  |
| 3.1 | Testing to ensure that the user can navigate through the app and select functionality | Click on the ‘Home’ menu item in the side drawer whilst app is running | The application should display the homepage to the user and should be able to see that they are on the homepage via side drawer menu | The application displays the homepages to the user as expected. | PASS | See Figure 15 for evidence. |
| 3.2 | Testing to ensure that the user can navigate through the app and select functionality | Click on the ‘Current Roadworks’ menu item in the side drawer whilst app is running | The application should display the current roadworks page to the user and should be able to see that they are on the current roadoworks via side drawer menu | The application displays the current roadworks to the user as expected. | PASS | See Figure 16 for evidence. |
| 3.2 | Testing to ensure that the user can navigate through the app and select functionality | Click on the ‘Planned Roadworks’ menu item in the side drawer whilst app is running | The application should display the homepage to the user and should be able to see that they are on the homepage via side drawer menu | The application displays the current roadworks to the user as expected. | PASS | See Figure 17 for evidence. |
| 2.1.3 | Testing to ensure that the user can navigate through the app and select functionality | User clicks on the ‘Current Incidents’ menu item in the side drawer whilst in portrait mode | The application should display a listview of all current incidents to the user whilst still being in portrait mode. | The application stops completely after toast message displays and so, no view is displayed. | FAIL | As mentioned previously in testID 2.1.3, the application stops executing when the current incidents menu item is selected. Therefore, no evidence is given since it is the same error. |
| **Summary Test Results for Running the Application:**  The application allows for the user to move between views via the use of the side drawer component. Once a user has selected which view they wish to see, they are moved to the selected page. Even though there is not an indication of what page the user is on in the actual view, the selected menu item is highlighted to show the user which page they are on. | | | | | | |

Graphical user interface, text, application, Teams

Description automatically generated

Figure 15 - Homepage with nav menu correctly highlighted displays as expected

Graphical user interface, text, application, Teams

Description automatically generated

Figure 16 - Current Roadworks page with nav menu correctly highlighted displays as expected

Graphical user interface, application, Teams

Description automatically generated

Figure 17 - Planned Roadworks page with nav menu correctly highlighted displays as expected

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| --- | --- | --- | --- | --- | --- | --- |
| **ID** | **Name of Test** | **ACTION** | **EXPECTED OUTCOME** | **ACTUAL OUTCOME** | **PASS/FAIL** | **EVIDENCE** |
| 4.1 | Testing that the functionality required of the features asked for in the specification have been tested. Searching by road for current roadworks | User enters a string value to be searched in the search bar of the application | Once user enters their search text, the search criteria filtered into a new array list and displayed as a listView. | The user can search on current roadworks as well as planned roadworks. 2/3 pages. Due to the error discovered in test 2.1.3, user cannot search for current incidents | PASS |  |
| 4.1.1 | Testing that the functionality required of the features asked for in the specification have been tested. Searching by road for current roadworks | User enters ‘M74’ into search bar | The application should display a list of all current roadworks that are taking place on the M74. | The application displays a list of all current roadworks that are taking place on the M74 as expected. | PASS | See Figure 18 for evidence. |
| 4.1.2 | Testing that the functionality required of the features asked for in the specification have been tested. Searching by road for current roadworks | User enters ‘m77’ as a search input | The application should display a list of all current roadworks that are taking place on the M77. | The application displays a list of all current roadworks that are taking place on the M77 as expected. | PASS | See Figure 19 for evidence. |
| 4.1.3 | Testing that the functionality required of the features asked for in the specification have been tested. Searching by road for current roadworks | User enters no search criteria into the search bar | The application should not filter any data sicne no search criteria was entered. # | The application displays all current roadworks taking place since no search criteria was submitted by user. | PASS | See Figure 20 for evidence. |
| 4.2 | Testing that the functionality required of the features asked for in the specification have been tested.  Searching by road for planned roadworks | User enters a string value to be searched in the search bar of the application | Once user enters their search text, the search criteria filtered into a new array list and displayed as a listView. | The user can search on current roadworks as well as planned roadworks. 2/3 pages. Due to the error discovered in test 2.1.3, user cannot search for current incidents | PASS |  |
| 4.2.1 | Testing that the functionality required of the features asked for in the specification have been tested.  Searching by road for planned roadworks | User enters ‘A19’ into search bar | The application should display a list of all current roadworks that are taking place on the M74. | The application displays a list of all current roadworks that are taking place on the M74 as expected. | PASS | See Figure 21 for evidence. |
| 4.2.2 | Testing that the functionality required of the features asked for in the specification have been tested.  Searching by road for planned roadworks | User enters only ‘helen street’ as a search input | The application should display an empty listview since there are no planned roadworks for ‘helen street’. | The application displays an empty listview since there are no planned roadworks for ‘helen street’ as expected. | PASS | See Figure 22 for evidence. |
| 4.2.3 | Testing that the functionality required of the features asked for in the specification have been tested.  Searching by road for planned roadworks | User enters no search criteria into the search bar | The application should not filter any data since no search criteria was entered. | The application displays all current roadworks taking place since no search criteria was submitted by user. | PASS | See Figure 23 for evidence. |
| 2.3 | Testing that the functionality required of the features asked for in the specification have been tested.  Searching by road for current incidents | User enters a road for current incidents to see if their search matches the results which should display in lisrview | The application should display a listview of all current incidents to the user whilst still being in portrait mode. | The application stops completely after toast message displays and so, no view is displayed. | FAIL | As mentioned previously in testID 2.1.3, the application stops executing when the current incidents menu item is selected. Therefore, no evidence is given since it is the same error. |
| **Summary Test Results for Running the Application:**  The application displays the data only in portrait mode. Due to time constraints, I was unable to get landscape views working correctly and so, this functionality will be prioritised by the next iteration of the application. The app also failed to load current incidents; this is due to a parsing error of the parseDescription method in the item class. I was unable to fix this error, however, this will be focused on for the next iteration of the development of the application. | | | | | | |

Graphical user interface, application

Description automatically generated

Figure 18 - Search results returned to user when they enter valid data

Graphical user interface, application, Word

Description automatically generated

Figure 19 - Search results returned to user when they enter data not contained in the rss feed

A screenshot of a phone

Description automatically generated with medium confidence

Figure 20 - Search results returned when user enters no search query

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

Description automatically generated

Figure 21 - Search results returned to user when they enter valid data

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

Description automatically generated

Figure 22 - Search results returned when user enters criteria that does not match the rss fedd data.

Graphical user interface, text, application

Description automatically generated

Figure 23- Search results returned when user enters no search query

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| --- | --- | --- | --- | --- | --- | --- |
| **ID** | **Name of Test** | **ACTION** | **EXPECTED OUTCOME** | **ACTUAL OUTCOME** | **PASS/FAIL** | **EVIDENCE** |
| 5.1 | Testing the behaviour of the application when not connected to the internet or internet connection is lost | User disconnects internet from phone | The application should still execute whilst not connected to the internet | The application does not execute unless connected to the internet | FAIL |  |
| **Summary Test Results for Running the Application:**  The application does not execute unless connected to the internet which means that the application fails the test. This functionality of the app should be prioritised when working on the next iteration of the application next time. | | | | | | |

Graphical user interface, application

Description automatically generated

Figure 24 - Application stops executing when not connected to the internet

A picture containing background pattern

Description automatically generated

Figure 25 - Error message for the internet not connecting