Mobile Platform Development Design Report.

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Github Link: <https://github.com/cmclar/MPDAssessment> (video and reports are on the top level)

The application has been developed to parse three separate RSS feeds from the Traffic Scotland website with regards to current incidents along with ongoing and future road works. The application is built using three different screens/views to present the information in a simple and easily understandable format. Where possible the application was built to conform with Shneiderman’s 8 golden rules of interface design such as consistency, informative feedback and reducing short term memory load. Following these rules allowed for an interface design that focuses on giving the user the required information in a straightforward fashion that would ultimately provide ease of use above all else.

The first screen the user is met with when launching the application is a sort of splash screen in which they are advised that the application is loading the required data. Pressing the ‘Continue’ button in the centre of the screen will allow the user to transition to the main screen of the application once the data has been successfully loaded for display. This initial screen is designed to provide the user with the information that the application is working on providing the necessary information while preventing the option for error or responseless actions within the main screen.

This initial screen is set up using a linearlayout in vertical orientation containing a textview element and button element respectively.

The next screen the user is met with after pressing continue on the into screen is the main screen of the application. This screen is designed to allow the user to select the information they are looking for such as current incidents or planned roadworks and cycle through a list of available alerts with the application showing some basic information on the selected incident. For each incident the user can press the more info button which will result in an informative popup box containing detailed information relating to the incident in question. This additional information was originally placed alongside the rest of the information in the screen however after user testing it was discovered this made the application feel cluttered. Due to this feedback the decision was made to relocate the additional information to a popup box that will appear when desired leaving the main screen with only the menu buttons and basic information for each incident. This popup is created using the toast function and due to this it is available temporarily before returning to the main scene of the application. This allows the user to read the required information while not having to navigate multiple screens or having further interaction required to proceed.

The main screen itself in portrait layout is built using four buttons and two textview widgets at the top of the screen placed inside a linearlayout element with vertical orientation. These four buttons are to search for a specific incident (more on this below) and to choose between current incidents and roadworks. Choosing any of these will retrieve the desired list of alerts and begin populating the fields below that contain the incidents description. Below this two linearlayouts containing two textview elements respectively are placed in a vertical fashion with each linearlayout providing horizontal orientation for the child textview elements. These two linearlayout elements are used to give information on the road the incident is on and the date it was most recently updated on the traffic scotland website. Below this information is another two buttons allowing the user to get more information on the selected incident or cycle to the next incident in the given list. It was originally planned to have each incident on the same page however when testing this approach this lead to long pages of results that often proved difficult to understand. In order to improve the user experience the amount of information the user is presented with at one time was reduced to one incident with the option to cycle through incidents.

Alongside this portrait view of the application there is a separate landscape view of this main screen with the interactable object being rearranged to provide further ease of use within the application. For this the four buttons at the top of the screen have been arranged into a two by two grid instead of having four buttons in a column down the screen. This frees up more space as vertical space becomes more of an issue when the screen is rotated to a landscape orientation.

As mentioned above during the main screen there is an option to search for a specific incident. Upon pressing this button the user is taken to another screen and met with the an editable textbox in which they can provide a specific road in which to search for any incidents or roadworks. Once the user inputs a road to search on they can then press the search button which will return them to the main screen of the application. If any roadworks or incidents match the searched term then this list is displayed on the main screen of the application and the user can then cycle through the list through the regular method. This approach allows for ease of use as it functions similar to the other ways of looking at the traffic scotland data.

In terms of functionality the application was designed to be reliable and usable above all else. To this end each button and piece of text is large and clear to allow the information to be easily read. The large buttons help reduce mistakes made when using the application as it is considerably easier to navigate screens using large buttons as opposed to small ones. The information is only presented as and when required by the user so as to not bombard the user with unneeded complexity which might distract from the information that might be relevant to the given situation. The application unfortunately requires a couple of seconds at the beginning to load in the required RSS feeds from the traffic scotland website. While this is split over three separate threads in order to streamline this as much as possible it still presents a slight delay when using the application. While this initial delay is regrettable it does however mean that when the application has loaded the required information the application runs quickly and smoothly as the three RSS feeds are stored within the application for later use and do not need to be repeatedly downloaded when requested. Alongside this the application was designed to prevent errors resulting from user actions where possible as this also tied into Shneiderman’s eight golden rules when designing interfaces. This prevention of errors resulting from user actions was ensured through unit testing of the application and will be described in a separate document.