Design Report

Steven Smith

Matric No:S1315451

This report aims to specify the design goal of the application (app), what components were chosen for the app, why they were chosen and any human computer interaction (HCI) principles that were followed.

The design goal for the app created was to create a simple and easy to use design that does not require much time to learn. It aimed to be relatively easy to use with well-placed icons to help the user through navigation while still not cluttering the screen with unnecessary icons that could confuse the user. The number of screens the app has is balanced by ensuring that each page has a decent amount of information for the user, but not enough to overwhelm the user or clutter the page. Alternately, the screens were ensured to also contain a decent amount of information for the user as a screen with minimal information could be seen as unnecessary and can complicate the ease of navigation if the application is filled with many screens that have little to no information for the user. Throughout the app, the same background is used and is also always visible by way of ensuring that most components have an alpha value of ~0.75 which allows the user to view the background through semi-transparent components. This was done for sake of both consistency and to make the user feel that they were not loading up new screens but merely loading up new components which helps with the simple and easy to learn aesthetic that the app is aimed to achieve. When the application is changed from portrait to landscape, all the same components are used within the screen, this is done to ensure that the app stays easy to use as if the user changes the screen orientation and the components within the screen were to change drastically it could create a confusing user experience when using the developed app.

The main screen in the app has three main components, two buttons and a text view. The text view is used as a title to the page so the user knows what the use of the app is. The two buttons are used to allow the user to load up either the current incidents RSS feed or the planned roadworks RSS feed. The background for this screen is a picture of the “Welcome to Scotland” sign which also features a main road and vehicle in the background; this is used along with the title to ensure that the user is aware of the function of the app. The toolbar is not present on the main screen as no further functionality is required other than that offered by the two buttons, it was then not included to ensure that the screen would feel open and simple without unnecessary clutter. If the screens orientation is changed, the background changes to a different resolution image of the background, this is to ensure that the image is not stretched in a strange way when changing from landscape to portrait which would not look aesthetically pleasing to the user. The placement of the components is kept simple, the text view that contains the title is placed at the top of the screen, where the user would expect it to be. The two buttons are then placed in easily reachable areas for the user in both portrait and landscape view.

Both the upcoming roadworks and current incidents list use the same XML layout, in the screen where the list is loaded, the background is the same as stated previously to add to the simple feeling of the app. In the list screen, the toolbar is used to both supply the title of the current list shown and also has icons to allow the user to search by both the start date and to search for a specific title/road. The toolbar is placed at the top of the page as it is easily viewable and the rest of the page can be displayed below it easily and clearly. The icon used to search by date is an icon of a calendar which helps the user know what search is carried out in a simple and intuitive way. As for searching by title, the icon used is a magnifying glass as similar icons are used on many other apps when using their search functions. When the calendar icon is clicked, it loads up a calendar that the user can pick a date from, the standard android calendar is used as this will increase the chance that the user has seen and used this style of calendar before. When a date is selected, the list results are then filtered for incidents/roadworks on that day. If the search icon is hit, it brings up the native keyboard for the android phone, this is also to ensure that the user has encountered and used this style of keyboard. An input to search by can then be entered and when the search icon on the keyboard is selected, results are filtered by the search. By using the native calendar and keyboard, this increases the chances that the user has encountered these components before and is somewhat familiar with how to use them.

The rest of the screen is a large list view that is filled with custom list elements that display the items title at the top, in the expected place, this also allows the user to read the most important part of information first as the road that the incident/work is on is the main part that will matter to the user. Below the title, the description is given, below the title is the start date for the item, this is included as the user can filter by this result so should be able to view the start date in the list view. The number of days the work/incident will last for is then next to the start date, depending on how long the work will last for, a coloured circle will appear next to the days, if a roadwork lasts a short while it will have a green light, if a roadwork is going to last a long time it will have a red light and if a roadwork will last a regular amount of time it will have an amber circle, these colours were chosen off the traffic light scheme as many people are aware of this scheme and are aware that green is to show the good or shorted time whereas red will show longer times. The circle next to the days was chosen as it is easily visible when scrolling through the list and also takes no readability away from any of the text within the item, when the list is being retrieved a progress bar is shown to let the user know that the list is being loaded.

When an item is pressed, a new view is opened up to show the title of the item, a google map of the location of the item, the items description, the start and end date of the item and the link to the Traffic Scotland website. This view has a slightly transparent white background to help with the readability of the screen, the title is positioned at the top of the screen and the map below the title. In portrait mode, the description is below the map with the dates and link below the description, whereas in landscape, the description is to the right of the map with the dates and link below the description. The views are still similar with only position changes, this was done as the map needs to be a decent size to allow the user to view it properly.

The HCI protocols mostly followed when creating this app were the following:

Consistency

Reversal of actions

Usability

Consistency was followed by ensuring that the user has the same background throughout the navigation of the app, the app can also be used multiple times while providing the same experience. Reversal of actions was done by ensuring that if the user presses the back button or closes and reopens the app that the app will respond appropriately and if any errors do occur, the user can navigate back to the screen needed quickly and easily. Usability was also followed as the app is created to be easy to learn and use, this is done by putting the components in the areas that a user would expect them to be in, such as placing a title at the top of the page and buttons at easy to reach locations etc. It is also accomplished by ensuring that the app has functionality to help the user search through large lists and that there is not too many screens for a user to navigate or too much information on a screen at any one time as to confuse the user.

By designing the app in the following way, it should result in a simple and easy to use application that performs the tasks it is required to do without being overly complex or complicated.