Mobile Platform Development Coursework

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Design

The objective of this coursework was to produce a mobile app on Android Studio which would inform users of the current incidents which are occurring on the roads in Scotland and also the planned roadworks arrangements with the location also. To gather this information, the Traffic Scotland website was used as it provided two RSS (Rich Site Summary) feeds relevant to the project. These feeds provide users with real time updates on the latest news coming from these specific issues, this case being the current incidents and planned roadworks. The main aim of this project was to create a user friendly application which would allow users to easily access this data to assist them with their travel routes. To do this, steps had to be taken in order for the app to provide this help while also maintaining a simplistic layout. The first step which had to be taken was for a simple colour scheme to be implemented as for the user not to be thrown off using the app as bright colours such as yellow have the potential to do so. Colours such as blue and black are more suitable colours to use as these are easily readable and won’t distract the user from the features which the app has to offer. The first main part of the structure of the application was a text View which contained the title of the app, “Welcome to the Traffic Scotland App!”. The main title of the app was shown in a darker orange colour merely to alert the user to the opening of the app and stand out from the rest of the text whilst not being bright enough to have thrown the user off of using the app completely. The next feature contained in this application was the inclusion of buttons which would enable the user to see the feed in which they are interested in. The buttons needed to be the main points of interest on the application due to their importance, so as a result, steps were taken to ensure that these were the first things the user would see upon starting the app. This helps to keep the application simple to use by avoiding any unnecessary features.

Upon creating the buttons on the application, the next step was to enable the feed to be outputted on the app in a neat and structured manner. This was achieved by only using the title tag and the link tags so not to include too much irrelevant data which would once again throw the user off. The length of space on the page was also an issue as there will still need to be space on the application to ensure the other button is also visible on the page. To do this, the height of the feed was adjusted so that it would only take a brief section of the page, in this case it was set to 200 dp. This ensured that the other button was included at the bottom of the list after one of the buttons were clicked, to enable the user to press the other button instead of having to restart the app to use the other button.

Upon pressing the buttons and having the RSS data shown to the user, the layout will be able to be scrolled up and down for users to see updates which the latest updates at the beginning and the further they scroll the less recent the updates will be. The RSS feed is also updated every time the user clicks on one of the buttons, this will enable them to always stay up to date with the news of the roadworks and incidents in Scotland. The user has the option to research further into a specific incident, they have the option to press on any of the events in which they wish, and they will then be taken to the Traffic Scotland website and there they will be given more specific information on the matter, with the app only providing a brief snippet of the event.

To keep the design as simple as possible is vital as with the bare minimum details ensuring that the app is in little danger of crashing on the user, as most larger apps have the potential to crash due to the huge workload required of the phone for it to run efficiently. Steps were taken to ensure also that the application was usable in both portrait and landscape orientation, as users do not want to be forced to use one layout and would prefer to have the luxury of picking between the two.

In conclusion, the design was kept to a standard in which any user whether information rich or poor could easily access and use the application without any issues, with details providing them a brief update on incidents or roadworks occurring in Scotland, and external links helping them to gain more information with help from the app to first identify and then research the issue.

Testing

Throughout the creation process of this application, it was vital to conduct vigorous testing in order to ensure that the app was running correctly and efficiently at all times. The biggest aspect of testing had to be dominated by making sure that the RSS feed was working appropriately in order for the app to be considered a success. The main aim of creating the RSS feed at first was to register the data in a List View to broadcast the data on the application. This was then converted into a button to have the list only shown after the button is pressed. After testing was conducted, this process was duplicated only with a different list and button to show the other relevant RSS feed. Steps were first taken to have the button disappear after being clicked using the set Visibility feature, but after testing both buttons would be absent, and this meant the app could no longer be used after one of the buttons were clicked. To prevent this, the buttons were made to be visible at all times of the app being used, with the buttons moving to the bottom half of the page and the data on the top half after a button has been clicked. To obtain the right amount of data from the RSS feed was analysed and it was decided that the most appropriate tags to be shown on the app were the title tag, and the links tag. The title tag was used to see the header of the incident and the link, so the user could navigate to the external site for further information. An Array List was created for each of these tags to have this in an orderly list to be shown to the user. Testing showed that depending on a user’s internet connection would determine how quickly the data could be retrieved and then outputted onto the application. For those with a slower connection, steps had to be taken to show that the prompt was working, and it would take time to load. A pre Execute method was authorised to accomplish this, with “Busy loading rss feed…please wait…” being shown to highlight to the user of this action, with the information hopefully being shown very shortly after.

A Pull Parser method was created in order for the data from the RSS to be parsed onto the application. The appropriate input encoding is highlighted in this method for the RSS with “UTF-8” being the encoding relevant to this task. The method shows in testing that information provided will not be equal to the end of the document, and if the ‘event’ is equal to the start of the tag (the beginning of the specific tag, which in this case, is title and links as mentioned previously), then it is eligible to be used in this app. In an if statement, another String was referred to (the item tag), as to be ignored by the method but the title and links tags are not to be ignored as they are to be used in the application.

In conclusion, testing was thoroughly conducted throughout in order for results to remain consistent with the overall aim of the app. The main aim was to give users brief and up to date notifications on what problems may be occurring in terms of current incidents and planned roadworks on the roads of Scotland, and with the buttons giving access to a list view of the related RSS feed, this target could be achieved whilst maintaining a user-friendly approach at all times.