

ID 2216 - Developing Mobile Applications

Assignment – 3 (Android Application)

Project Report – Traveling Salesman Application



Group 6: **The Super Group**

Application Name: **UTurn**

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Introduction

In this report, we present our Graphical User Interface (GUI) developed using Android along with the subsequent testing and feedback from the real users. This report shall provide a good idea of how the final version of the application shall look and function.

Learning from Feedback

With our web application and prototypes, we received some really good feedback regarding the design and the intent of the application. We therefore, had a good base to kick start our real application design. We planned to keep it simple yet pleasing and attractive with only the necessary functionality to make it as user friendly as possible. This is something that has also come up in observation and testing discussions, that applications that have too much functionality are tiresome to learn and therefore not used to the same extent as a slimmer application.

UTurn – UI Design Details

Android user interface is highly based on the concepts of Direct Manipulation – a popular Human-Computer Interaction style characterized with touches, tapings and rapid responses. Using android, we can develop classic three-tier applications with clear cut separation between the UI, business-logic and backend database components. Our application pretty much follows the same pattern much similar to MVC architecture (Model-View-Controller).

Our application consists of all activities and fragments of android UI grouped under view package, UI handling and user requests processing code under controller package and the database part under model package. We have ensured to maintain loose coupling between the components for easy replacement and dynamicity. Also, with our learnings we split the login and register functionalities to different activities making the UI look more spaced and clean with less options. We have designed most of our components in a way that incorporates recent design features like **Material Design** and **Fragments** to make its look and feel better.

UTurn – Android User Interface

The following screenshots represent the various screens of our application. Most of the functionalities are implemented so as to receive better feedback from the users in the testing phase. Some of the changes with respect to the UI are as follows.

Title Screen

- Added a new logo
- Added a catchy tag line

Login Screen

- Split into two screens now – Login functionality grouped in Login screen.
- Registration Screen – New account sign up functionality.

Home Screen

- Commute mode selection option was initially planned to be placed only in the Map screen but with the feedback from the users, we decided to provide the mode selection option in Home screen too.

Map/Navigation Screen

- No changes in this screen.

The following screenshots represent our Android UI with good backend implementation.

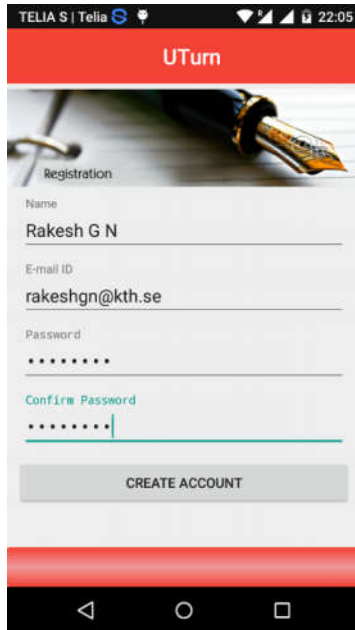


Figure 1: Register Screen

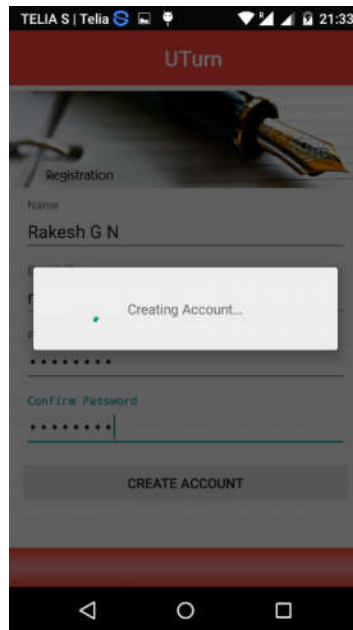


Figure 2: Creating Account

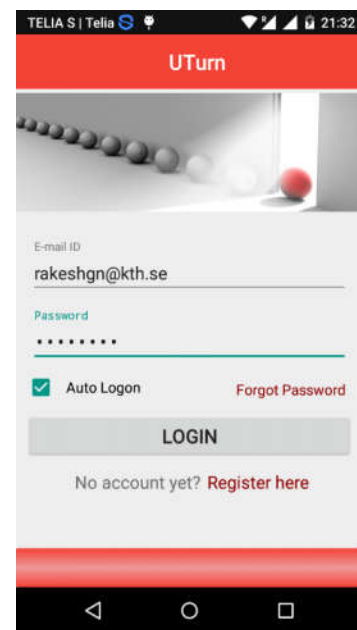


Figure 3: Login Screen

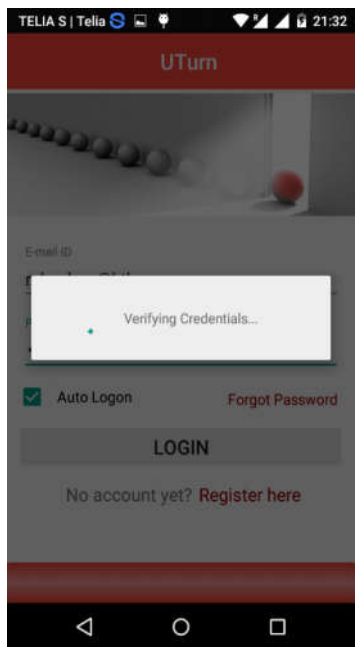


Figure 4: Verify Login

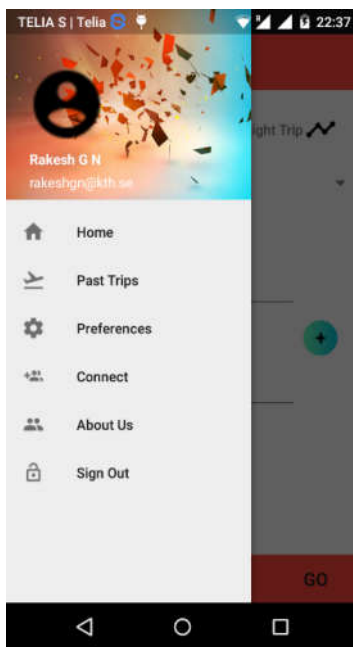


Figure 5: Navigation Slider

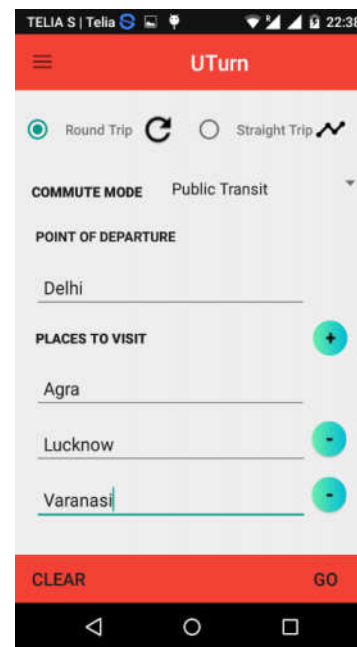


Figure 6: Home Screen



Figure 7: Map Screen

Testing and Observations

With the notion of getting feedback, we did testing with five different users of which three of them were part of our old testing group and had seen our previous prototypes while two of them were relatively new. We decided to do it this way so that we could have the idea of the people who have been associated with the development of our application and at the same time we could get some fresh pairs of eyes. Thanks to our users for their invaluable feedback, time and cooperation. Following is a collective summary of feedback and responses.

- ✚ Very easy to understand the application
- ✚ Pleasing and simple design
- ✚ The logo could have better chosen colors
- ✚ Maybe you could add street view pictures of the destinations so you can visually recognize when you are there?
- ✚ Perhaps you can keep track of which destinations has been visited, and which are left (cross out or make it red).
- ✚ Can you save old routes?
- ✚ Good that you can choose either straight route or roundtrip.
- ✚ Would it be possible to add a feature of recommended restaurants or coffee places nearby?
- ✚ Will there be an option to show nearby parking lots for car parking?

Conclusion

The transition from a web application to an android application was mostly a matter of changing the user interface, most of the logic behind did not see any major changes expect if we try to add in new functionalities. What we noticed in the testing group was that when it was changed into an android application people viewed it a bit differently. It was more obvious to the user that the application would be carried around and used along the route. Even though a web application was as usable in a mobile phone as a native application, the connotations first and foremost go to a computer. In the case of a complete web application, you would mostly use it at home (or hotel, airport etc.) and then perhaps print it or take a screenshot of it, while the android application's obvious mobility opens up for more usability that can be of help along the way (such as street view pictures or restaurant recommendations) with better look and feel.

Of course this is also a matter of simplicity, how much functionality do you want in an application? What is the purpose of our application? Perhaps you could at a later stage integrate it with other existing applications that already do things such as restaurant recommendations but at this point it seems to be shifting focus too much from what we have decided – that is an application that solves the traveling salesman problem for a given route. However, there are a lot of functionalities that could be implemented with our application which we think shows that it is indeed a very topical and useful application!