Chapter 6
Developing a Mobile Navigation Aid

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ABSTRACT

Previous studies have shown that mobile device is capable of providing navigation aid for both pedestrian and in-car. Crucial to this, is navigation application supported by the mobile platform. This paper proposes a mobile application intended for navigation aid. The application is design using a generic software development process. The application will enable user to navigate within certain vicinity. This will help users to easily find an unfamiliar place. Other function are integrated in the application, such as tasks function for setting the schedule visit, prayer function for du'a and additional information about certain places. The system is developed using the MIT apps inventor software as the main platform, plus the adobe Photoshop for the maps and route purposes. The system works on android platform only. The system is implemented for use in the Kulliyyah of Information and Communication Technology (KICT), International Islamic University Malaysia.

INTRODUCTION

There are many existing product that actually have the same idea and method of providing navigation by ICT based (Dang, Iwai, Tobe, Umeda, & Sezaki, 2013; WIKIPEDIA, 2013). Most of the existing product uses the same features and principle of navigating which is to provide the route to the intended place in the shortest and easiest way. The concept of this application is actually based on the user to find ways in a building or big shopping mall where user can easily get lost or finds it difficult to locate a shop or place. Some of the example of existing applications are; Setia City Mall application, One Utama Shop-

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ping Complex, Sunway Lifestyle Application, Fast Mall Application and Aisle 4111. These are several existing application that have been the references for this study.

The study was able to compare and relate between applications to overcome problems faced at the current time. By this, all the advantages and disadvantages could be seen in a more detailed environment (Indoorlbs, 2013; WIKIPEDIA, 2013). As stated above, it is clearly that all this application has been well developed with all its functions which has make the human life more convenient. However, only a few problems still exists in these applications and because of these problems, users are not fully satisfied with the application and from what the study has observed, users tend to refer back to the navigation board in the mall for finding their way. By going through this process, this study understood more on the application and what needs to be done to improve the application that is being developed. Thus, the developed application could be more convenient to use and meets its requirement as a navigation system.

A case point is the Kulliyyah of Information and Communication and Technology (KICT) which new building was launched on the 11th May 2012 (IIUM, 2013). It is a new atmosphere for the students especially for those who have just joined the Kulliyyah to be familiar with the big new building. Consists of many big blocks and wings, it may not be easy for the students to find the lecture venues, the lecturers offices, the cafeteria, the main hall, Musolla and the resource center. Although there are signboards here and there but they are neither much user-friendly nor easy to find as the building is big and fill with classes and labs that could be very confusing at times. During class interchange, the students only have ten minutes to find their classes and for new students finding venues would consume time and would only result in late attendance to class. Furthermore, lecturers also get confuse sometimes as they have many different classes in a day. The only reminder for them is a manual note of a time table. In addition, after having a hard time finding the particular venues, students may get tired which would effect in the students' participation and performance.

Thus the objectives of the studies are, first to study the students' problems in finding ways to respected venues, second is to conduct research on the best platform for development, third will be to develop the application that is embedded with several necessary features and functionalities, and lastly is to conduct the usability test on the developed prototype. The scope of this study is focusing on the development of mobile application that can provide navigation which will help user to find the shortest way to intended venues. The study area involved in the project is the route which the user is to take using the least time and energy. This project is carried out in the KICT building which required the researcher to really understand and analyze the best route to take. It also includes the easiest and simplest way to get to the intended venue. Since the project is technology-based, it needs to research various technologies and the capabilities that each technology offers. The project also needed to find the most suitable mobile platform to develop this project.

Based on the existing products that are available in the market, there are some parts of these applications that can be improvise to make the product more usable and functions better. As the product created is not based on a shopping mall, there are few changes that can be done to fulfil the criteria of the product to the advantage of the user. A reminder shall be created for the user to remind him/her on classes or exam at an exact place and time with a miniature map. Other than that, the proposed application will be more detailed in navigating to the user destination. The application will also update on the event and exam and even tutorial venues for all subjects for the student to take note. The application will also be linked with the KICT repository for fast viewing for the users. The application proposed by the project will run on all Android operating system which can be found in most smartphones today.