

CHAPTER 1. INTRODUCTION

1.1 Background Study

In this thesis, a mobile application called Nanjing Guide Map Application supported by Android Application, and Firebase as a database is designed and implemented for guiding people tourists, especially freshmen students, in an outdoor environment. First of all, this chapter will discuss why this application was made and explain how the previous system already exists and the advantages and disadvantages of the system.

Mobile Phone has now become part of our daily lives. Especially when we visit other countries, the thing we have to prepare is a smartphone. Because the smartphone can not only be used for calls, send messages, but we can also install various applications to suit our needs.

Android comes with an Android market which is an online software store. It was developed by Google. It allows Android users to select, and download applications developed by third party developers and use them. There are a lot of games and other application.

Android applications are composed of one or more application components (activities, services, content providers, and broadcast receivers). The manifest file must declare all components in the application and should also declare all application requirements, such as the minimum version of Android required and any hardware configurations required.

Nowadays, more and more people are using the Android operating system; almost various groups of people use it. Moreover, someone who has just arrived in the new country that they visit will have difficulty understanding and memorizing famous places or facilities in the country.

In this thesis, the writer propose the software development based on Mobile Application, based on the existing framework Nanjing guide map application was develop. Nanjing is a large city in Jiangsu province. And it has many universities so that there are international students who want to study in this city.

So we need an application that can use to guide the place, not only those other obstacles that arise for tourists or students who want to vacation somewhere we have to know the location, entry tickets, and how a general description of the place.

Based on the case above, the researchers took the initiative to create a mobile-based Nanjing Guide Map Application. This application utilizes Google Maps as a map and GPS service embedded in smartphones to determine the location of tourist attractions and essential facilities in Nanjing City.

1.2 Existing System

In Earlier tourism system, whenever a tourist visits famous spots, to know more about the place he hires a guide. The hired guide then narrates history of the place and there is no surety that all narrate story is true.

Also, the Nanjing guide map has been made in the form of a guide book, which contains a brief description, address, and admission ticket. Here the writer wants to make the Guide Book based on application and add the Google Maps API so that users can get directions directly.

1.3 Advantage & Disadvantage of Existing System

In the tourism industry, tourist information is obtained mainly through newspaper, magazines, radio and other simple ways those are available easily. But problem is that tourists are not able to get travel information timely when they are on the move. While today's mobile devices are becoming more intelligent, compared with PC, they still have the following limitations like small screen and tiny keyboard, limited CPU capacity, limited memory space, slow and fitful Internet connection. Many mobiles of recent decades have travel guide application.

But the application on these mobiles works slow due to continues acquisition of the bandwidth. Therefore, the mobile end-user's operation is very difficult, and the contents display on the screen of mobile device is limited.

1.4 Problem Identification

Based on the background, the author can identify the problem when developing this application will be completed in this research, as follows:

1. How interested foreigner especially freshman student about information of tourist attraction in Nanjing?
2. How foreigner especially freshman student to get information about tourist attraction in Nanjing?
3. How foreigner Muslim to get information about places of worship and halal restaurants in Nanjing, China?
4. How necessary foreigner get information about tourist attraction in Nanjing?

1.5 Propose System Solution

The proposed system doesn't require a physical guide. The Mobile application installed on the mobile of tourist can act as a guide. Without having a guide, it will help one to get information of the place in their mobile and check out information of the place which they are currently visiting.

Our objective is to utilize an Android mobile phone to extract information about a place. We use the GPS (for getting user's current location) and GPRS (for internet connectivity between mobile and server) features of the Android phone.

1.6 Limitation of the study

- a. This Application applied to the Android Operating System.
- b. This Application display information about tourist attraction, restaurant, and mosque in Nanjing based on database.
- c. This Application focus on search tourist attraction, restaurant, and mosque in Nanjing based on database.

1.7 Research Methodology

1.7.1 Research Location and Time

This research will place in Nanjing City, the reason why this research set in Nanjing City because with the consideration that Nanjing City does not yet have a particular Guide Map aimed foreigner, especially for a first-year student.

1.7.2 Data Collection Method

In this method, the author utilizes the resource such as books, journals, and articles related to mobile programming with Android, as well as journals relating to Geographic Information Systems to get some information and knowledge to develop this Application.

Besides, the author also conducts interviews, interview is an interactive forum involving two or more people engaged in a conversation initiated and coordinated by the interviewer so as to get information specific to a certain area of aspect.(Amelia, 2019) So, we can collect from users about what their requirement to develop this application.

1.7.3 Software Design Methodology

The Software Development process is very complicated task if it is done without any proper of algorithm. Then, in order to make the software development processes simple and systematic, The Author use framework software development life cycle (SDLC) model is a conceptual framework describing all activities in a software development project from planning to maintenance. This process is associated with several models, each including a variety of tasks and activities. The Software Design Method used to develop this application is Waterfall Model as one of the models from SDLC framework.

1.8 The Writing Structure

As for the systematical structure, this thesis is divided into five chapters, with an explanation for each chapter is as follows:

CHAPTER 1 INTRODUCTION

This chapter author discusses the background of the study, Existing System, Advantages and Disadvantages of Existing System, Propose System Solution, Limitation of the Study, and Schedule.

CHAPTER 2 REVIEW OF LITERATURE AND THEORITICAL BASIS

This chapter discusses the literature review about this thesis, also discusses the basic theories that support and related to this thesis research.

CHAPTER 3 ANALYSIS AND DESIGN

This chapter discusses the analysis and design of the system. Analysis of the general description or the current condition, analysis of the current system, analysis of system needs and write the conceptual framework to generate a new application

CHAPTER 4 IMPLEMENTATION AND TESTING

This chapter discusses the implementation of the results of analysis and design of the system into coding to produce an application that can be used by the user. Moreover, it also illustrates the user interfaces of the system and conducts testing of the system to determine whether the application is already done or still need an improvement.

CHAPTER 5 SUMMARY, AND CONCLUSION

This chapter discusses the implementation of the results of analysis and design of the system into coding to produce an application that can be used by the user.

CHAPTER 2. REVIEW OF LITERATURE

2.1 Technology Overview

2.1.1 Global Positioning System

GPS (Global Positioning System) is a navigation-based system interconnected satellites that are in their orbits. The satellites belong United States Department of Defense it was first introduced in 1978, and 1994 was used 24 satellite. To be able to know the position of a person, it is necessary to provide the tools given the name of the GPS receiver that serves to receive the signal sent from

GPS satellites. The position is changed to a point known as Way-point later be the latitude and longitude coordinates of a person's position or a location on the screen on an electronic map. Applications that are on the target side (client) after getting a request from the tracker (server), the client will request the coordinates of its position on the GPS(Global Positioning System), which will then be sent to the tracker (server). Since 1980, GPS services used to be only for purposes the military began to be open to the public. Although these satellites are valuable hundreds of millions of dollars, everyone can use it for free.

2.1.2 Google Maps and Google Map API

According to Mahdia and Noviyanto (2013: 164), Google Map Service is a free and online virtual global map service provided by the company Google, Google Maps offers draggable maps and satellite images for the whole world. Google Maps also offers a search for a place and route travel. Google Maps API is a service provided by Google to users to utilize Google Maps inside developing application. The Google Maps API provides several features for manipulating maps, and adding content through various types of services owned, as well as allowing users to build applications enterprise on the website.

2.1.3 Firebase Realtime Database

Firebase is a Cloud Service Provider and Backend as a Service owned by Google. Firebase is a solution offered by Google to facilitate the development of mobile and web applications. We don't need to build features created on the backend and infrastructure from scratch so that we can focus on developing high-quality applications without the need to spend a lot of effort. Firebase has many SDKs that make it possible to integrate this service with Android, iOS, Javascript, C ++ to Unity.