

GPS Based Tourist Guide System

Lavisha, Nidhi Sharma, Mouktika Kurupudi & Vandana Khanna*

Department of EECE, The NorthCap University, Gurugram, India

*Corresponding Author Email: vandanakhanna@ncuindia.edu

Abstract: Seamless internet and new age smart devices have paved a way towards a great array of software applications and new technological innovations. Usage of smart phones can be seen everywhere around us, and life seems impossible without them. Using cellular devices, the information can be obtained very fast and thus these improve humans' lives. In this paper, Web services-based software development architecture has been suggested. This framework inculcates the three-layer Web development architecture into smart phone software development. On basis of the three-layer architecture, tourist guide system has been developed. This tour guide project is an Android application which uses Google map API, Global positioning system (GPS) and Internet. The system captures latitude and longitude of the location and displays the location on map. The tourist guide system can attain information for large accommodation establishments, historic sites, tourist points, road maps etc. It has great practical application potential.

Keywords: Android, Global Positioning System (GPS)

I. INTRODUCTION

Current tourist scenario is heavily dependent upon the guide's knowledge and his/her ability to convey the information to the tourist, but this can only be said for tourist spots. It is not always convenient for a person to hire a guide to work, and the internet is riddled with incomplete or wrong information from multiple sources which can be exhausting for a tourist.

Advantages of Existing System

When found the right source of information, tourist gets to enjoy all perks attached to the current system which includes one on one interaction, self-discovery of places etc.

Disadvantages of Existing System

Acquiring information about the location is one of the biggest obstacles a tourist faces. Though numerous sources are available, they are plagued with numerous problems like print media (like guidebooks) don't necessarily carry updated information and maps to scale, and internet is riddled with contradictory information from numerous sources which can overwhelm a tourist. Further adding to the problem, the fear of getting lost in an unknown place cannot let tourist enjoy the place to its fullest.

II. PROPOSED SYSTEM

Our project of android based tourist guide system presents the tourist with map of the specified city depending on its present location registered by the user of the android phone. It gives the basic details of tourist spots, which makes it easy for the tourist to select the locations to visit. It comprises of all the details of those places and how to navigate to the locations. In addition, it provides information about important public amenities like hospitals, railway stations, airports etc. Our project is mainly advantageous for the tourists having no information related to the locations they want to tour. By giving specific geographical based data, the visitors and common people who are relocating to new towns can get a superior guidance of the locations they want to tour. The application which is proposed does not demand for any internet access and thus abolishes the disadvantage of single point failure. The GIS based application used in this project, gives benefits to the tourist that he can see the required place in map and can roughly calculate the time that will be needed to arrive at the final location.

Our project is first developed on a computer/PC and then run on Android phones so therefore there would be a technical requirement for both devices. For the development of the application, 2.8 GHz processor with at least 4 GB RAM would be ideal. For user's convenience we built the app for Android Lollipop version and higher, this is done to accommodate a broader spectrum of people as users.

Software is the basis through with developers interact with the system and therefore it is important to pick the right specifications for a smooth process. Eclipse software works best with windows 7 and above and the programming language used for the presentation layer is JAVA with J2ME platform.

Working

The guide system of the application is based on reading of GPS coordinates. Depending on the internet connection and device accuracy, the smart phone detects the location of the place user is in. This location is cross-referenced against the database of fed locations; when matched, it moves on to the next action. This action is to play the related audio file which gives details of the user's current location which can be anything from famous landmarks to any institute or residential area. Coordinates consist of GPS dimensions, which are tied to their respective audio files through Eclipse software. As phones detect GPS locations dynamically, user gets updated information about where he is, through his phone without much effort. The aim of this project is to access the information in a simple and convenient way. It's easy to use interface has been designed to be appreciated across all classes of people. The data flow diagram for the tourist guide system is shown in Fig. 1.

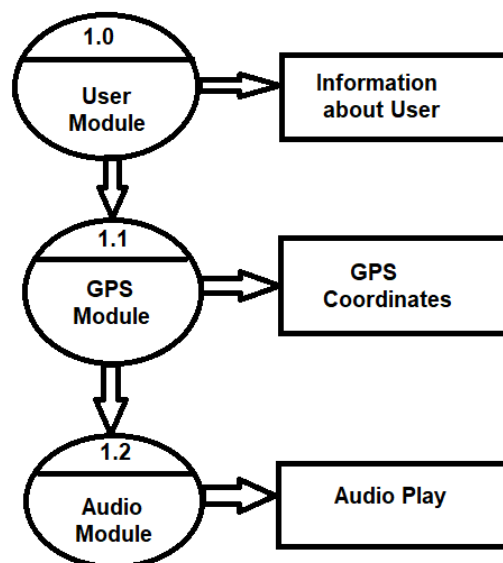


Fig.1: Data Flow Diagram for the GPS Based Tourist Guide System

III. RESULTS

Upon opening the app, a user gets the home screen (Fig. 2(a)), immediately followed by a screen that asks the user to enable GPS, as shown in Fig. 2(b). After the user gives GPS access, the program then shifts to location service class (a fused API), which runs in the background that would detect the location of the user by using Google maps in play services. The attained location is matched with program code where many different locations of Delhi/NCR have been declared. When found a match, the screen goes to location display page, where the media of the location is displayed. The user simply clicks play and can hear all the information related to the area. Example of one the places (The NorthCap University) which has been added in our project is shown in Fig. 3.

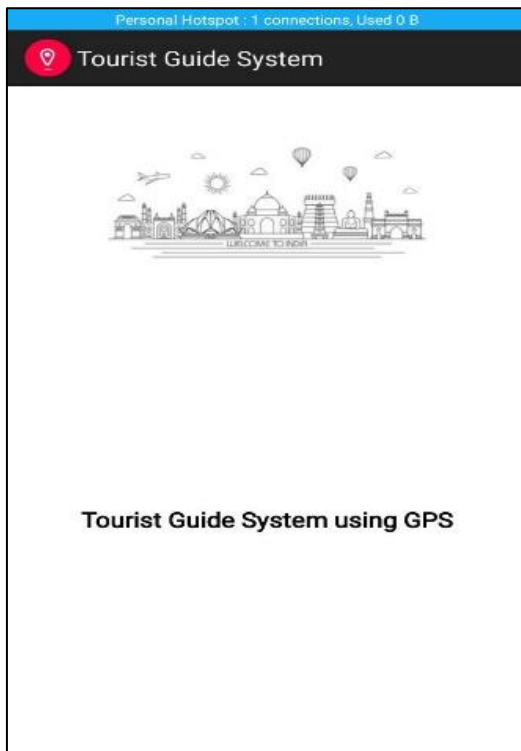


Fig. 2(a): Home Screen of the GPS based Tourist Guide System

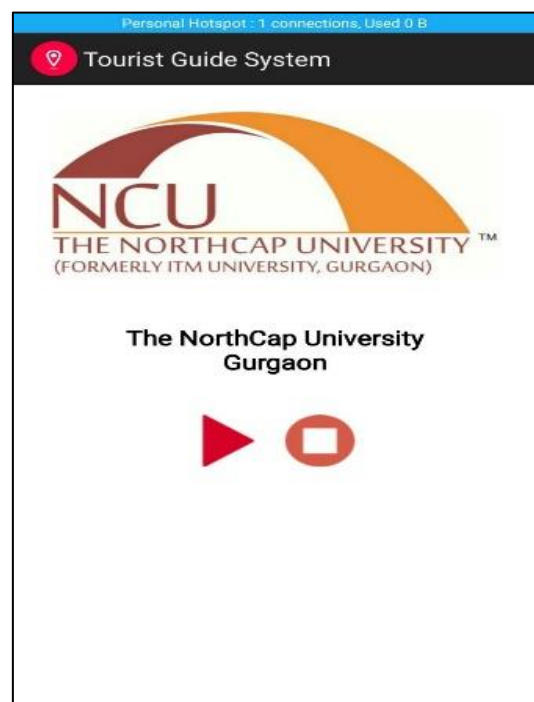


Fig. 3: One Example Place in the Tourist Guide System

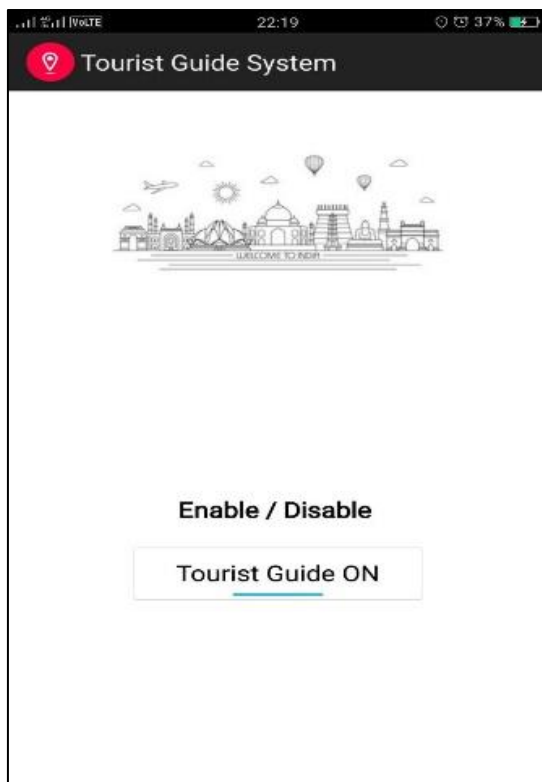


Fig. 2(b): Screen for Enabling GPS in the Tourist Guide System

Applications

The proposed system has wide range of applications, some of them are listed below:

- City tourist apps
- Guiding system for blind people
- Helps in guiding visitors in museums and galleries.
- Can be used for navigating maps in specified areas.

IV. CONCLUSION

The applications of our project are numerous and can be extended to multiple sectors. It combines the convenience of an internet enabled phone with the utility of a tourist guide in finding a great solution for tourists. It also reduces physical effort applied in finding legitimate sources on an interactive platform.

Conflict of interest: The authors declare that they have no conflict of interest.

Ethical statement: The authors declare that they have followed ethical responsibilities

REFERENCES

- [1] S. Bhattacharya and M. B. Panbu, Design and Development of Mobile Campus, an Android based Mobile Application for University Campus Tour Guide, International Journal of Innovative Technology and Exploring Engineering, Vol. 2, Issue-3, February 2013.
- [2] P. Mate, H. Chavan, and V. Gaikwad, Android Based Continuous Query Processing in Location Based Services, International Journal of Advanced Research in Computer Science and Software Engineering, Vol. 4, Issue 5, May 2014.
- [3] S. A. Jordan and Irbid, Building Mobile Tourist Guide Applications using Different Development Mobile Platforms, International Journal of Advanced Science and Technology, Vol. 54, May 2013.
- [4] L. R. Pawar and S.S. Patwardhan, Problems & Suggestions for Android City Tour Guide System Based on Web Services for Mumbai, International Journal of Advanced Research in Computer Engineering & Technology (IJARCET), Vol. 4, June 2015.
- [5] B .S. Reddy and Dr R.P Sam, Mobile Location-Based Tour guide System, International Journal of Computer Trends and Technology (IJCTT) , Vol. 4, Issue5, May 2013.

This volume is dedicated to Late Sh. Ram Singh Phanden, father of Dr. Rakesh Kumar Phanden.