Smart city traveler: A proposed architecture for tourism

Vaibhaw Tikhile
vaibhawatikhile@gmail.com
Prof. Ram Meghe Institute of Technology and Research, Amravati, Maharashtra

S. W. Ahamed
swahmad@mitra.ac.in
Prof. Ram Meghe Institute of Technology and Research, Amravati, Maharashtra

Abhishek Kakde
abhishekkakde27@gmail.com
Prof. Ram Meghe Institute of Technology and Research, Amravati, Maharashtra

Aniket Belsare
belsareaniket@gmail.com
Prof. Ram Meghe Institute of Technology and Research, Amravati, Maharashtra

ABSTRACT

As it is not possible for the tourist to always prefer the guidebook, guide or any other sources for the information of any location. To provide facilities to the users for the purpose of tourism different kind of android app has been made. In today’s world necessary part of the people’s life. The use of Mobile phone applications is rising continuously, centered on the people's day to day life. In such applications, location dependent systems have been detected as an important application. Such application which presents the architecture and implementation of such a location is commonly known as Smart Travel Guide. The mobile travel guide system for Android Mobile Phones that are able to provide information about tourism by using travel guide system traveler is able to travel in the world. This system takes advantage of light-weighted technology that can combine more than one data sources to create value-added services, while overcomes the limitations of mobile devices.

Keywords: Mobile devices, Application, Android.

1. INTRODUCTION

A smart city is defined as the integrated form of multiple technological solutions in a secure manner. This is used to manage the city’s assets. The city assets including but not limited to, the local departments' information system, school, libraries, transportation system and other community services. The main aim of building the smart city traveler is to improve the quality of the life of tourists. It will help in reducing the costs and resource consumption. In today’s world, the mobile app is playing a major role in making the city as a smart city. This system will help the users. It will be showing the current position of the user on a map, shows current events or places to eat or drink near the current position according to his saved plan. Users also can navigate around the map.

2. LITERATURE REVIEW

In the existing systems, the tourist has to face many problems and troubles while traveling, they have to hire a tour guide for traveling and for that they have to pay extra money. Sometimes tour guide are cheated with them and they have to face lots of problems and they have to suffer from lots of challenges of traveling. Some of the tour guides lie with tourist and ask for wrong information.

Sometimes finding places is very difficult for tourist because they don’t know the name of specific places, each and every time they have to ask for a different kind of places with their name to other people, they are newer in the city so it is difficult for them. There are different applications based on tour guide but they give only information about places if traveler stays in hotels for that there is a different application while traveling traveler must know the names of places otherwise each and every time they have to search for places in the particular city.

3. SYSTEM DESIGN

a. Data Flow of System
Above diagram is a data flow diagram (DFD) which shows a graphical representation of the "flow" of data of a smart city traveler application. A DFD shows what kind of information will be input to an output from the system, how the data will advance through the system, and where the data will be stored. There are two systems one for main user/client and other for admin that handles and manages the whole system. Admin is the main handler of the system who can add cities and popular places of the particular city according to a category like gardens, park, café, hotels etc.

The user has to first login to the system then create one travel plan with timings for a day in a particular city. The system sends and stores all the data given by the user to the database. If the user wants to travel or view his plan he can go to his profile and click to view plan. Then the whole plan created by a user is shown on Google map with his current location and also give navigation for each location the user gave from current locations.

b. Use Cases of System

In the branch of software engineering, use case usually represents how the system will be work or acts like, the use case diagram is a list of actions or event steps typically defining the interactions between an actor and a system to achieve a goal. The actor can be a human or it may be a computer system, third-party applications or any other external system. The use case for user and admin is as shown below in the diagram.
Use Case diagram shows interactions between actors and systems. In the case of an admin who has full control of a system, Admin has all the authority on a database of an application so his all interaction is with the database. So as in the diagram, admin and database are shown as actors and all the functions in the brackets are interactions between them. Admin first log in to his own application with his login credentials then he got all the authority of database of an application for that he can add cities, categories and popular places of a city.

**Presentation layer:** It is the most basic layer. This is the layer that represents Android application itself. Also called as the front end of an application which can communicate with classes (Activities) shows interface for users that the user uses it for communication i.e. in short messaging component. One activity shows the user interface to users for writing a short message to others. Activities are entirely written by extending Activity main (base) class. A service is an application component that can perform long-running operations in the background, and it does not provide a user interface.

**Logic layer:** As shown in architecture diagram logic layer is communicating with the server for accessing database hence mostly android developers use a “PHP scripts” for accessing the database. MYSQL is used as a database at the web server and PHP is used to fetch data from the database. To communicate with the database application uses the PHP program code this code will communicate with the database and fetch or returns the data to the user.PHP is also used to fetch the record from the MySQL database once it is created. In order to fetch the record, some information must be passed to PHP page regarding what record to be fetched. The first method to pass information is through GET method in which $S_GET command is used. The variables are passed in the URL and the record is fetched. As shown in architecture diagram Google Maps Engine is communicating with the logic layer as our application uses Google Map for giving a user/client a traveling path. Using Maps Engine Pro, we can create rich, multi-layered maps, share information with stakeholders and make decisions more collaboratively. So Google Maps Engine that allows users to upload their own map data and have it displayed as layers above the Google base maps. This application uses Google map engine for giving a user/client a complete traveling path according to their traveling plan (locations are given by the user) stored in the database by calculating longitude for each location he gives in traveling plan.

**Data Layer:** The data layer is an android database layer. Here information is stored or retrieved from a database or file system. The information is then passed back to the logic layer for processing and then back to the user. SQLite is an open source SQL database that stores data to a text file on a device. Android comes in with built-in SQLite database implementation. SQLite supports all the relational database features. In order to access this database, you don't need to establish any kind of connections for it like JDBC, ODBC etc. The Android API contains support for creating and using SQLite databases. Each database is private to the application that creates it. The SQLite Database object represents a database and has methods for interacting with it by creating the database, making queries and managing the data.

**4. PROPOSED SYSTEM**

“Smart City Traveler” mobile application which will help to travel in any specific region. This app is basically for the new comer in any city or any place. Through this app, we will provide the information about that particular place. Not only the information but also the famous places of those areas, the distance of those areas from any particular location, the specialty about those places. Along with the famous place, this app will show the nearby location also. This app will help the tourists to great extent. Not only the tourist but anyone can use this app for the guideline regarding any places. This app can be used in anywhere by anyone. As it’s a mobile application which is user-friendly as well as pocket-friendly too. In today’s generation, the smart phone has become so common that it can be available in anyone’s pocket. This kind of mobile application helps in making the city as smart as can by providing the facility to the user anywhere. In this application we will use the GSM (Global system for mobile communication) services, GPS (Global positioning system) services; this will help in finding the location easily. GPS is the space-based navigation system that provides location and time information in all weather conditions, anywhere. Similarly, the GSM services were developed to describe the protocols for the second-generation (2G) digital cellular networks used by mobile phones. GSM is the cellular networks which mean that cell phones connect to is searching for the cells in the immediate vicinity. By having all these facilities the users get an easy way of finding any place and can make their tourism more interesting. “Smart City Traveler” is an application for android mobile so we implement this application in an android operating system for development of application in Android.
According to our application, the main work is for admin that he can add cities, places etc. So we create one separate application for admin in that he can log in to that application and then he can add data to the database. Admin can add city, then categories of that city like gardens, waterpark, hotel etc. then add place of selected category like hotel name of category hotel, the name of category waterpark. Places that can be added by admin are retrieved from google map so for this admin required network connectivity.

“Smart City Traveler” for user/client who is the main user of an application user required is to register himself to an application for creating his profile in the database by entering a name, mobile no., email id and password for his profile etc a user can log in to the application then he enters into a homepage which contains one menu, one log out option for the user when he wishes to exit from application. A user has one menu which has Make Plan, View Plan, and Share menu item so a user can make his plan for a day by entering into Make a plan after creating his plan if he wants to view his plan just enters into View Plan menu item

If the user wants to share his plan with his friends so a user can go to share menu item in that he can share his travel plan with his friend by sending a link to his friend on various applications like Whatsapp, Facebook etc.

5. CONCLUSION

The design and implementation of a mobile application called Smart City Traveler, with which mobile users can see routes on a scheduled basis and tourism guidance information they need anytime and anywhere. By Smart City Traveler, users can get an attraction’s detailed information, including text, picture particular, Smart City Traveler can provide users with location-based information, which can be browsed or queried through a map. The user can search the nearby attractions Locations according to their reviews and ranking and the view spots.

6. FUTURE SCOPE

- As the world is developing very fast, and people are more interested in traveling so this application will help the traveler to create their whole day plan.
- This application will connect with a different third-party application like Uber, OLA, and Trivago. This will make users journey very easier user doesn’t need to hire any tour guide this will act as a tour guide for the traveler.
- There are multiple places included in this application; this application will give each and every information about a place with a click. So that traveler doesn’t need to ask any information about a particular place to anyone.
- Travelers are having different mother tongue different languages, so we are trying available language select option this will make the user very familiar with our application.

7. REFERENCES