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ANDROID SMART CITY TRAVELLER

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Abstract - At present, tourists and travellers waste a lot of time to plan their trips, all options available to plan their trips right now does not actually provide a cost effective and all the alternatives to their travel. In this context, this application aims to identify the main computing needs to support the development of interest based mobile application model for tourists. This project proposes a system that can automatically shows the places, travel routes, different modes of transport available and personalized plan for the user. This application also leads to quicker decision making with respect to places to visit. This system is basically used to help a traveller new to the city or anyone who wants to explore a city within a specific time period.

1.INTRODUCTION

As of now, tourists and explorers burn through a lot of time arranging and choosing their excursions to accomplish most extreme fulfillment. In this unique circumstance, this application plans to recognize the primary processing needs to help the improvement of tourist point of advancement for the user, by the method for a simple to utilize versatile application proposition. Ordinarily, most explorers like to visit the popular touring spots just as neighborhood charms one of a kind to that spot. To accomplish this, we propose a framework that can naturally show a movement course and plan for the client. This application likewise prompts speedier dynamic as for spots to visit. This framework is essentially used to help an explorer new to the city or any individual who needs to investigate a city inside a particular time span. The client should enter his/her interests and preferences while joining. When the record has been made, the client can pick the area physically or let the framework recognize his/her present area as the beginning and finishing point of the outing. Then, at that point, the beginning and end session of the excursion should be determined by the client. Since every one of the excursions of a client will be put away, he/she can likewise see the past trips. The framework utilizes the Google Maps API to get every one of the spots around the chosen area with all their data. Then, at that point, these areas are arranged depending on evaluations, distance, and different requirements to put it before the client.

2. REQUIREMENT ANALYSIS

TECHNOLOGIES USED

ANDROID STUDIO as a tool used to build both the Applications, User end and Admin end. XML language is used to build screen of android app (User Interface). Java language is used as Listener for accessing User details. API'S (application programming interface) is developed and integrated to android studio in order to communicate with server. All the database will be maintained in SQLITE db.

Hardware Requirements

Mobile Application

- Processor - 1GHz and above
- Battery - 1200mAh and above
- RAM - 512 MB and above
- Memory - 2 GB and above

Software Requirement Specification

- Operating system :Windows 7 Ultimate and above
- Coding Language : ANDROID
- Front-End : ANDROID
- Data Base : SQLITE
- Software Android studio

3. LITERATURE SURVEY

The development of internet stimulates the emergence of various Online Tourism Agencies (OTA) to post their service information online . One challenging problem of OTA is how to recommend appropriate travel routes for users with different requirements. The path planning of scenic tourism is a relatively new research field. Some recent research on

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the travel route planning has been carried out. Ying Xu, Tao Hu and Ying Li proposed that a new Improved PRR algorithm (IPRR) based on the PRR by considering different personalized requirements in order to recommend high-quality travelling routes for customers. The IPRR algorithm takes various factors into account, including the user's personal preferences, user types, the real-time traffic condition of the tourism region (i.e the real-time nodes and the number of people on the path), and the historical statistical data (i.e. historical tourists number at the spot). Graph search algorithms have often been adapted for both indoor and outdoor path planning. In these applications, an operational terrain of a mobile agent (e.g. a vehicle, a mobile robot, etc.) is represented using a graph that consists of a set of nodes and a set of edges. A node represents a special location on the terrain surface and an edge represents the connection between two nodes. An edge is associated with one or more costs. For examples, the edge cost is a distance measurement when finding the shortest path and a time measurement when finding the fastest path. Early works on graph search algorithms are based on uniform cost search mechanisms. Dijkstra's algorithm is a prime example for such uniform cost search algorithms. It starts a search process from a source node and iteratively selects a node for expansion until it selects a target node for expansion. Here, node selection is based on the cost between the source node and a given node without considering its remaining cost to the target node. Thus, in finding the shortest path, it expands all the nodes that are closer to the source node compared to the target node. Obviously, this results in excessive expansion of nodes that do not lie on the optimal path, thus, degrading the efficiency. The same techniques discussed for shortest path planning might not always be used to find the fastest path in outdoor environments due to the inability of mobile agents to travel at their peak speed everywhere in irregular terrains. Mobility maps are an effective way for dealing with such irregularities. In the paper proposed by Wanmai Yuan, Nuwan Ganganath, Chi-Tsun Cheng, Guo Qing, and Francis C.M. Lau, a grid-based mobility maps was introduced for representing speed limitations in outdoor terrains. Further, a heuristic approach for finding the fastest path on such maps was introduced. The proposed heuristic is proven to be both admissible and consistent. Therefore, it can be used with A*-like heuristic search algorithms for obtaining fastest paths efficiently.

4. AIM AND OBJECTIVE

Aim: To develop an android application that analyses user's likes, dislikes and time period that user is willing to put in to explore a place and give an optimized result.
Objective: This application can be used by a traveller who is new to the city or anyone who wants to explore a city in a bounded time period, so the person has to do minimum travelling and can make use of time wisely.

5. SYSTEM ANALYSIS

Existing system
In the existing system, it is necessary for user to input the name of the destination exactly. If sightseeing place is decided, users do not have any problem (Google Maps). But, if the user wants to explore new places which he is not aware of then this system is not desirable. Current system shows only the top locations around the user. But, the user has to choose the places he wants to visit and search routes for each places separately. Furthermore, Google map displays it only to the route of the destination. On the other hand, in this system, the point that can propose a sightseeing route and sightseeing plan in the planned time to return is big superiority. In the existing tourist guide system, user is necessary to input an individual visit. Therefore, it is necessary for the traveller to prepare for sightseeing spot beforehand. Traveller can only visit the places which he is aware of. If it is a famous sightseeing spot, traveller can easily check it on a book or Internet. However, if it is not a famous sightseeing spot, but there are a lot of attractive places the traveller will not be aware of it.
Proposed System
The Places are sorted and selected based on the top rankings by the foursquare. During the Make trip/create trip the user is asked some questions helping them to filter out in searching the places, the places are displayed on the maps giving a clear idea of the location and giving the paths from one place to another from the start location to the end location. The Time shouldn't exceed 22 hours and the travel plan you choose is saved only for a single day and exceeding will be dissolved. If the time specified by the user exceeds 8 hours i.e. between 9 am to 7 pm the system also asks you whether you want to visit a adventure or water park and will show you options based on the rankings and reviews about it. Since the Traveller may be new to the city not knowing any place, in the map view if the user clicks on the marker he can see the ratings and reviews which are recorded from the Foursquare itself. The System requires a Working Internet Connection all the time for the app to work. The frontend of the System makes use of Android Studio while SQL Server as the Backend. Our application also has a notification feature which reminds the user of the time and the place he is supposed to visit next, which inturn helps the user in completion of the trip according to what he/she has planned.

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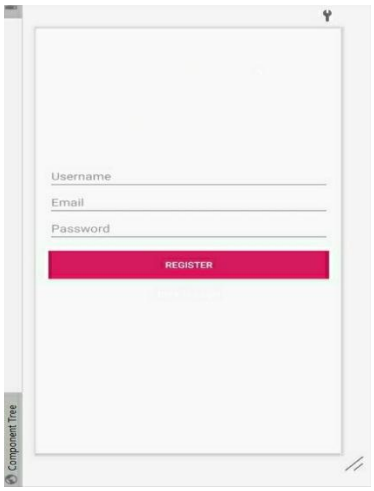
6. MODULES

1) Registration: The application allows the user to register in the application with basic details like name, mobile number, email, and password. This application uses Sqlite Database where the user details will be stored in the mobile database, which is primary source.
2) Login: Once the user is registered user can get an access to login to the application. The entered mobile number and password will be checked in the database, if the user is present then application allow him to do next process else it asks for check credentials or register again.
3)Device geo location capture: Nowadays many applications capture the location of the user to locate or track any one.On installing the app the user is asked to provide the location permission, then with help of location GPS which is inbuilt app, gives the current latitude and longitude of the device/user.
4) Make your schedule: The user can make the schedule of the travel plan, initially the application captures the user latitude and longitude of the device and ask some question to select date and time. Once the date and time is captured again user has to select to which place he need to travel like shopping, temple, hill station.Once user select these then application call FOURSQUARE API to retrieve the data based on the user interest and gives the nearest location and user can select and save.
5) My schedule: Here all the list of data will be populating based on the user selection with respect to his latitude and longitude and he can choose any location and start seeing in google map.
6) Notification: once the user selects places the data will be stored in user database and alarm with notification will be set. Once the time matches with device time and trip time user will get the notification saying that you can start moving to next place.

7. IMPLEMENTATION

This task will contain more spotlight/focus and information to deal with, So be prepared. Now lets start with the first step to make another undertaking by any name then as the documents get stacked and as we know that Gradle is built, we'll have activity_main.xml and MainActivity.java and here we have Main Activity which will be recognized as the main homepage screen with two-buttons. In the second step, we have to make the User Interface of our App. The User Interface will be exceptionally major and simple to utilize. After UI is complete, move forward toward the coding part.
In MainActivity.java class, Intent is utilizing to explore users' decisions. An Intent is a class that is utilized to depict an activity to be performed. It is an essential way that assists engineers with beginning another movement inside an application. It can likewise be utilized as a device to impart between activities. For all activities, we should declare the intent filters in the manifest file. Now our Smart city traveller App utilizes Foursquare and google map to achieve show the guide, include markers to guide and access clients' scopes and longitudes. So as to use Google Maps administration, the application needs to enroll for a building key on Web headways. Presently make java class according to your needs,for example, a hotel.java, transport.java, shopping.java , and so on and start coding. Next, it's time for setting up (here setting means coding, declare, initialize) all methods, listeners, and buttons needed in all the pages like for transport.java, shopping.java, hotel.java, cafe.java, etc. , this means get done with all the coding for each and every page.



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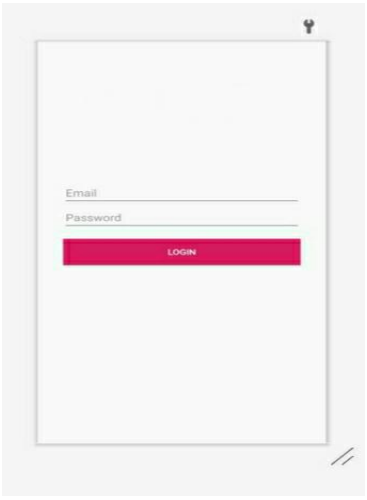

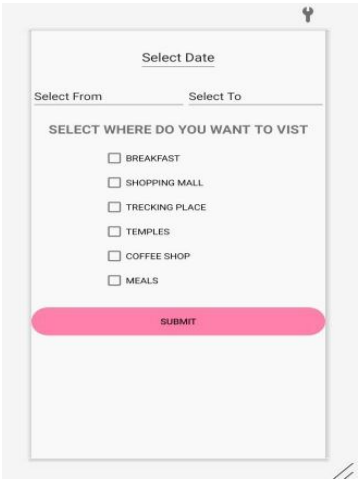

8. ADVANTAGES

The Data is very accurate and authentic as we take all the data from Foursquare. The User has to Login to use keeping the data secure. The user can also find the paths to follow to reach the final destination in map which gives a better view to the users. Since the location can be viewed in map, the user can even zoom in and zoom out to get a better view. The system gives many travel plans for the user to select. The usage of this application greatly reduces the time required to search for a place. The application also leads to quicker decision making with respect to places to visit.

9. CONCLUSION

Most people without using the latest technology waste a lot of time just planning their trips. So, an application like android smart city traveller really helps tourists to utilize their precious time to the fullest and also enjoy their trip at the same time.

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