

Applying strategic methods in designing tourism mobile application for Android

Dwaaraknath R.V¹, Ashok D², Dinesh Kumar S.A³, Sahana Reddy k⁴

Department of CSE, SRM Institute of Science and Technology, Tamilnadu, India

Received: January 30, 2019

Accepted: March 14, 2019

ABSTRACT: *The motive of the application is to predict pre-analysis of tour budget through mobile computing with complete requirements and needs in real time location. As default categories are provided in the cloud database. The guidance of tourist place is given as detailed information about each and every tourist location like a near place, map, direction, location information, and SOS emergency. It also shows the place address, timing for visit. The end user is able to establish parameters which are taken into interpretation by the route planner before the route planning. App module determines the consequence of tailored info and facility through smartphones on user capacity to plan for any journey and to recognize traveler awareness of the vehicle by real-time. The destination of trip-planning can be accessed through mobile applications for pre-analysis operation. Even Public vehicle (PV) systems (like the train, flight, etc.) are envisioned to be analyzing the budget approach for the selected tour. The most interesting category is "Travel Guides" that combines "Information Resources" and "Location-Based Services" category. The data is collected through multiple set data analysis systems and compared with the complete search technique underneath the identical service quality performance.*

Key Words: *Android, SQLite, Apriori Algorithm, Application, Tour Planner, JAVA*

I. INTRODUCTION

The tourism phase could be a convergence of assorted dealers of services to bid folks a comprehensive holidaymaker expertise. Travel agencies' and tour operators play an important role within the elevation of tourism. Currently, the travel and commercial enterprise business is one in every of the most important and most active industries within the world. If you're making ready to be part of this energetic business then you had to know supplementary concerning the agency processes than simply what happens among the walls of the workplace. The vast majority of people who travel around is on the rise and has actually gone up many hundred thousand-fold. This increase within the range of individuals exploit their place of keep and visiting another place has resulted in the enlargement of travel agencies and their linkages with the principal suppliers. The agency is a tie between the consumers, i.e., traveler or traveler and therefore the service suppliers, like tour suppliers, hotels, airlines, etc. it's the primary stop for anyone scheming travel, particularly to a foreign place, i.e., traveler destination, so as to create travel arrangements. The prime job of an agency is to produce stress-free and hassle-free jaunt to the person. it's conjointly vital for a agency to produce adequate info to the traveler so the tourist isn't bitter throughout his or her travel.

The motivation of the application is to simplify travel partner arranging with a budget set of investigation with complete requirements and with guide traveler. It designs somewhere around one course from a beginning stage to a goal. Before the trip arranging the client can set source and destination which are developed as the predefined set of a path. This undertaking to build up a model to decide the impact of customized data analyzed through mobile computing, and to understand budget explorer view on different modes of transport. Therefore, users will relish their peer-to-peer tour facilities with budget pre-analysis. It conjointly analyses the lessening magnitude relation of the process quality of budget coming up with victimization the projected answer. The simulations supported the set of a different path that evaluates the computational efficiency of minimum budget expenditure on all over expensive. The information is gathered through numerous set processing frameworks and contrasted and the comprehensive inquiry strategy under a similar administration quality execution. In the process of the problem description, it does not show the proper details about the path. Identification of areas inside the region wherever there are, or are possible to be, any issues related to growth or decline in commercial enterprise. They will also be helpful in identifying any planning issues and problems and how these might be resolved.

The performance of the projected answer, like the reduction magnitude relation of process quality, is analyzed. This paper inspects strategic methods in travel planning. the present solutions is also inefficient since majority of them are supported thoroughgoing search, and just some of them contemplate process

efficiency that cannot be secured. This paper assesses this downside in an exceedingly sensible approach by exploiting constraints and also the pure mathematics, and so a neighborhood search answer is projected. The functioning of the projected answer is analyzed, e.g., the larger is that the space of the town, the higher perform (reduction magnitude relation of process complexity) the projected answer can have. Simulations with the trip requests supported by the Los Angeles taxi information set are performed to gauge the projected strategy. An oversized quantity of computation will be saved. The projected answer during this paper is a lot of efficient, straightforward to implement, and might be utilized in massive cities. Moreover, the extent of users will be secured, e.g., short waiting time and fewer the projected answer will be simply extended to the longer term globally best to hurry the computation time wherever all the programming can be modified.

II. RELATED WORKS

A Short-Term Traffic Flow Calculation in Deep Learning by Nicholas G Polson

This system shows us where we build up a profound learning model to foresee activity streams. The fundamental commitment is advancement of an engineering that consolidates a straight prototype that is tailored utilizing λ_1 distribution and an arrangement of tanh sheets. The test of foreseeing activity streams are the high-pitched nonlinearities because of advances amid unrestricted stream, collapse, recuperation, clog. It is shown that nonlinear spatio-temporal impacts can be caught through profound learning models. Spatio-temporal relations are recognized among indicators in the main layer and nonlinear relations are shown by different layers. Interstate I-55's street sensor information is used to represent Strategy and activity streams are anticipated amid two unique occasions; a New York Knicks basketball game and an extraordinary cyclone occasion. The two situations have crisp activity stream administration variations, happening abruptly, and it indicates by what means profound studying gives exact here and now movement stream expectations.

B Improved Real Time Powering Station Recommendation Structure for Load Base Electric-Vehicle Taxis by Kanmani.L, P.G Scholar

Electric Vehicles (EV) are popular nowadays as they are very much environment friendly i.e. they contribute to carbon-dioxide reduction in the environment, decreasing the amount of air pollution, providing a safer environment. In real time charging system, the time taken to completely charge the vehicle is not a negligible portion in the total working hours, this usually tends to affect the income of an individual taxi. In the Existing system, the taxi driver usually chooses the charging station heuristically without much knowledge. Yet still the heuristically chosen option leads to more waiting time if a wrong solution is chosen. In The projected system, huge-scale GPS data mining is used to produce a real-time powering station recommendation structure for EV taxis. The present active state of each taxi is projected with Load balancing by integration of each EV taxi's past recharging trials and real-time GPS courses. Constructed on this data, a powering station that produces negligible whole time is suggested for an EV taxi demanding a recommendation, before its recharging starts.

C Ideal Demand-Aware Ride-Sharing Routing by Qiulin Lin*, Lei Deng†*, Jingzhou Sun‡*, Minghua Chen*

It is studied that the issue of discovering travel request statistics to enhance ride-sharing course-plotting, where several consumers whose itineraries and schedules alike are transported in a route determined by the driver of a vehicle in a cost-effective and timely manner. The significance of releasing economical and societal advantages of ride-sharing are dealt with this issue. In the meantime, it is demanding owing to the requirement of (i) facing travel interruption needs of consumers and (ii) creating online choices deprived of having the precise travel needs in advance. Demand-aware approach enables the new design space where we present a general framework for exploring the design space. We show that the demand-aware ride-sharing routing is fundamentally a two-stage stochastic optimization problem. In the frail intellect it displays that the problem is NP-Complete. Optimal solution with pseudo-polynomial time complexity is designed by exploiting the two-stage structure, which makes it agreeable for hands-on application. Real-world travel request traces of Brooklyn are used to carry out extensive simulations. The driver's revenue increased by 10% by using our demand aware solution instead of the conventional greedy-routing scheme, when the end results shown. Further the results proven to be successful not only for drivers but also for the customers as when considering the ridesharing solution, it reduced the customer's payment by 9% even the total travel time also reduced by 17% which can even be considered for environment friendly i.e. less greenhouse gas emission. 26% extra incomes per slot have also been provided to the drivers on participating in ride-sharing.

D Improved Real-Time Charging Station Recommendation System For Load Base Electric-Vehicle Taxis by M.Gomathi, V.Sharmila

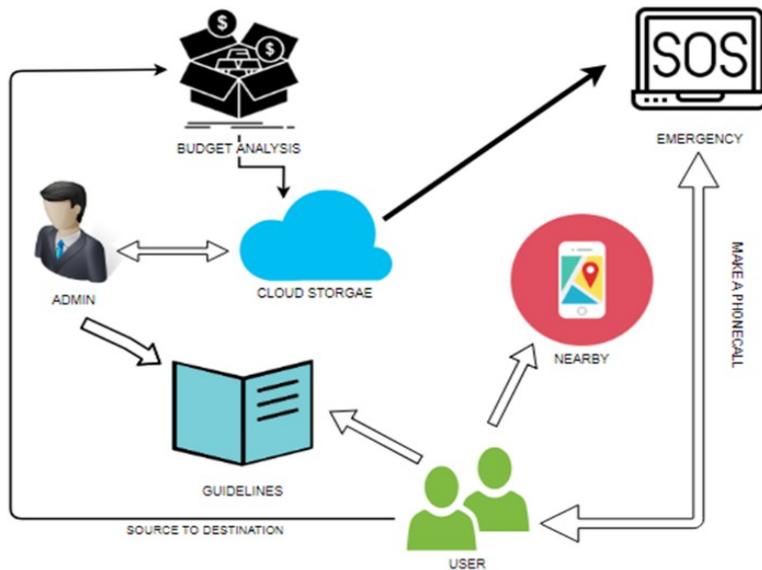
The real snag in the extensive acknowledgment of Electric Vehicles (EV) is the absence of a far reaching powering foundation. For understanding this, the Japanese administration has advanced EVs out in the open conveyance. The active examples of EV cabs ought to be not quite the same as Internal Combustion Engine Vehicles (ICEV) taxis: EV taxi may re-charge a few times consistently and restricted limit of the batteries causes EVs to just commute a constrained separation. The awful choice on the powering station, because of the long cycle, i.e., an extended holding up period of over an hour in the most pessimistic scenario may be prompted by picking one deprived of void charging heaps. In this way, picking the privilege charging station is essential to lessen the general holding up time. Strategy creators can obtain important data by evaluating the status (e.g., operational examples, driver salary and charging practices) of EV cabs. In view of this data, powering station that prompts the negligible aggregate period is prescribed for an EV taxi asking for a suggestion, before its energizing begins. Wide analyses checked that our expected period can reduce the rate period of EV taxis and is generally precise.

E Understanding operational and charging patterns of Electric Vehicle Taxis using GPS records by Zhiyong Tian ; Yi Wang ; Chen Tian

The absence of an extensively expanded charging setup caused a chief hindrance to the widespread reception of Electric Vehicles (EV). To resolve this, the Japanese administration has encouraged EVs in civic conveyance. Internal Combustion Engine Vehicles (ICEV) taxi's operational patterns should be diverse from that of EV taxis: Limited capacity of the batteries allows EVs to travel only a limited distance and an EV taxi may need to re-charge numerous times all over a day. Priceless data to strategy planners are given by understanding the status (e.g., active designs, driver revenue and powering-up behaviors) of EV taxis. To understand EV taxi behavior patterns this is the first paper created. Approximately 600 EV taxis functioning in Yokohama, Japan were used to form real time taxi GPS records. Working activities and powering activities are the two aspects to study the pattern. The net profits of both EV and ICEV taxis forms the most important finding: built on, which are obtained from data, we conclude that EV taxi fleet's commercial operation can be gainful in urban area, when precise strategies give compensations to EV taxis.

III. MODULES DESCRIPTION

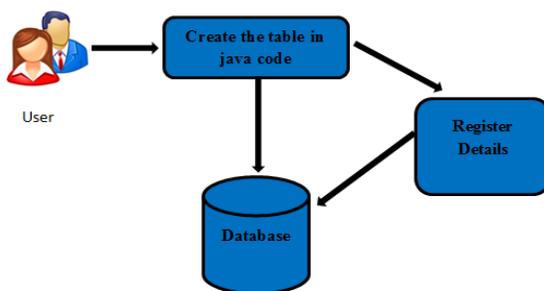
A. Architecture of the System



The basic architecture of the project shows that the cloud acts as a key part in the functioning. The cloud stores various details entered by the admin. The cloud accepts inputs from the user, validates them, and then returns an output. Hence, we can conclude that the cloud acts as an interface between the user and the admin and operates various activities of the project. Initially, the user gets access to application resources after logging into the server. The cloud server maintains a table for its list of users, holding their details and validating them at the time of logging into the server. This is done using XML code for data transfer, and SQL queries are used for manipulating the data in the SQL database. Once into the application, the user gets access to the cloud resources. The cloud resources consist of four guidelines, nearby sector, SOS emergency

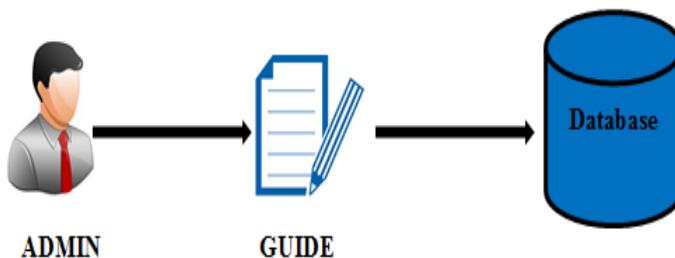
calls and mainly the budget pre-analysis. The admin writes out the guidelines of the tour into the application for the user to access. The admin can create, edit, delete, re-write guidelines for the user to access. The nearby sector is powered by google maps and the most frequent choices are offered to the user. The SOS emergency calls comes up with the list of emergency numbers that are needed at the times of distress and danger. The main module of the project is the budget pre analysis where the user gets the complete plan required for the travel. The module provides the user with the complete itinerary of the tour.the total distance of the journey, time taken ,cost of stay, food, fuel and other expenses are also provided to the user. This is done with SQL ,XML, JSON for storing the previous values that have been obtained from the previous users. The values are then compared with the current values and an optimized solution is then given to the user.

B. Login/Registration



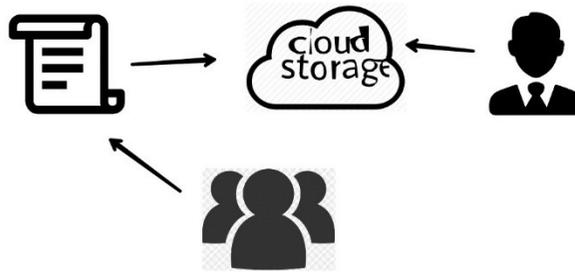
The Login page for staff comprises id and password, subsequently confirming, if it match Password to sanction in the app otherwise alert an error Dialog and display a note to the user. The registration table created using android SQLitecontains all the required information about the user and stores it in a database for further analysis and management. It also helps in classifying the user requests based upon the location(place), age,etc for finding diverse interest categories. For the registration process, the user has to provide his details such as username, address, email id, mobile number, password. Once the user has successfully entered these details, the function send these details to the cloud through xml functions, where it is stored in SQL database in a table. After successfully registering, user has to login using his credentials i.e username and password. An activity runs in android studio to obtain this credentials and xml is used as open data interchange .to check the credentials with the SQL database table. If the credentials matches the login successful message pops up, and user gets move into the application module.

C. Real time tour guide



The real time direction of tourist place is specified as thorough information about each and every place in India. The event update is generated for certain places. The admin updates the different tour plans offered for the user to choose. The tour guide also delivers the tourist with required needs and guidelines that are to be followed on the tour. The details about each and every tour packages provide is uploaded into the database by the admin in the cloud storage.The admin writes out the guidelines of the tour into the application for the user to access. The admin can create, edit, delete, re-write guidelines for the user to access. The user once logged into the application gets access to these details about the tour packages uploaded by the admin from the cloud. The cloud data varies with the updates from the user i.e. the cloud platform providing the data is subjected to dynamic environment. The admin enters the info about the places, their geographical location, the restaurants& hotels to stay. The packages also includes the modes of transportation available for the tourist to prefer according to his/her budget criterial. The data is added using android ide activities.

D. Budget pre-analysis



The application foresees pre analyses of tour budget through mobile computing that are provided in the cloud database with comprehensive requirements and necessities in real time location. The input source, destination, mode of transport are collected from the user. The lists of different routes providing different budgets, time, distance are provided in cloud database by the admin. The budget pre-analysis module implements the APRIORI algorithm to find an optimistic plan from the list of database. The cloud storage contains the data about the previous visits by different users from the source to the destination which can be used for further calculations. The data collected from previous users is stored in a SQL table in the cloud where data are handled through SQL queries. The input collected from user is matched with the lists of records in the table. For the comparison purposes the data is temporarily stored and transported using Java Script Object Notation (JSON). JSON is an alternative to the xml. XML is a markup language while JSON is a lightweight data interchange. Special semantics are needed to write xml codes while no such conditions are required for json data interchange. When the input is obtained a new JSON object is created to carry the input values to the cloud where it is then compared with the SQL database set for the frequent itemset using the APRIORI algorithm. The values once matched are then brought into the main function using the object created. Then the values are displayed further in the process.

Apriori Algorithm:

Apriori algorithm can be used for mining regular item set, also for association rule learning among transactional databases. This algorithm is known for its name for its "prior" knowledge about the datasets which are used for the processing of the transactional datasets. It has its major functions in data mining i.e. mining important frequent sets in large transactional datasets. Many large transactional datasets where data mining is performed to increase the amount of profit or the number in sales apriori algorithm is mainly used. In many sales transactions Apriori algorithm is used to find the frequent itemset for increased income. The application of this algorithm has proven to be successful in increasing the sales. For example, in shops onions & potatoes are frequently bought together just like bread, butter, jam. The famous Walmart theory that found baby diapers and beer sales have an intertwined effect i.e. people who buy baby diapers also preferred to buy baby diapers. This was proven and many super markets in USA placed the beer bottles and baby diapers near and found out that their sales were interrelated. There are three main components of the apriori algorithm, they are support, confidence and lift. Support gives of the basic preference value, confidence finds the association value while Lift states the final association theory found by the apriori datamining. Apriori algorithm works by recognizing the recurrent discrete objects in the database and covering them to greater and greater objects as extensive as those objects seem adequately often in the database. The recurrent objects determined by Apriori can be used to govern association rules which highlight overall trends in the database: Market basket analysis is one of the main domains where Apriori algorithm has its major application. The Apriori Property states -

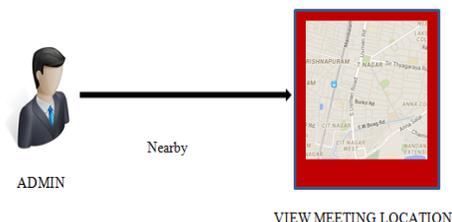
For a frequent itemset all of its non-empty subsets must also be frequent. The main concept of the Apriori algorithm is its anti-monotonicity of support measure.

for a transaction database T , backing threshold of ϵ , C_k be the candidate set for level k . it is expected to produce the candidate sets from the great item sets of the previous level, following the descending closing lemma. $Count[c]$ admissions a group of the data structure that characterizes candidate set c , that is originally set to be zero. Several particulars are avoided below, regularly, the most important part of the implementation is the data structure used for holding the candidate sets, and measuring their frequencies.

```

Apriori(T, ε)
L1 ← {large 1 – itemsets}
k ← 2
while Lk-1 ≠ ∅
    Ck ← {c = a ∪ {b} | a ∈ Lk-1 ∧ b ∉ a, {s ⊆ c | |s| = k - 1} ⊆ Lk-1}
    for transactions t ∈ T
        Dt ← {c ∈ Ck | c ⊆ t}
        for candidates c ∈ Dt
            count[c] ← count[c] + 1
    Lk ← {c ∈ Ck | count[c] ≥ ε}
    k ← k + 1
return ∪L Lk
    
```

D. Nearby Locations



Adjacent Places lets you discover great places near you. Search for nearby Restaurants, Foods, ATMs, Banks and a lot more. The adjacent locations are powered by google maps to locate the necessary facilities that are required by the tourist. The major obstacle in one’s journey to a new location is find out the nearest necessary places such as the restaurant, ATMs, hospitals , fuel stations, etc. this modules provides this function accepting the user’s current location through GPS service. The user tends to find out the places near to him once when he submits his current location. The policy of this module is to provide the places that are efficient and very much preferred by the existing or previous users. The module performs the activity using google maps API i.e. it acquires the GPS location and then searches for the most frequently visited places for a specific attribute e.g. while searching for the nearest restaurants it searches for the most frequently visited itemset by multiple perused users that is present in cloud data base. During the times where the planned situations fail , nearby always comes handy in saving for the unprepared conditions. It lets the user to discover the new places that are open for immediate uses.

E. SOS Emergency



The application will also provide you the current country emergency numbers as such Police, Fire, Ambulance, women safety numbers, etc. It allows you to activate distress call at the time of emergency or when in danger. The application requests for call permissions to perform emergency calls. Once the call permission is obtained from the an activity is drawn between the module and call and emergency buttons are then activated to perform calls. For tourist in an unknown location or in a strange place when subjected to distress or danger he/she requests immediate help. At those times this module where immediate emergency calls can be done at an instant is very much useful and handy to the user. The module consists list of common emergency call numbers and specific emergency contact numbers at a location e.g. forest dept emergency while trekking etc. the emergency numbers are stored in the cloud storage. When the location of the user change i.e. the user commutes fromone place to another the emergency numbers gets updated according to the change in location. The numbers from the cloud are brought down to the mobile application using JSON method of intermediate data interchange.

IV. SNAPSHOTS OF THE APPLICATION

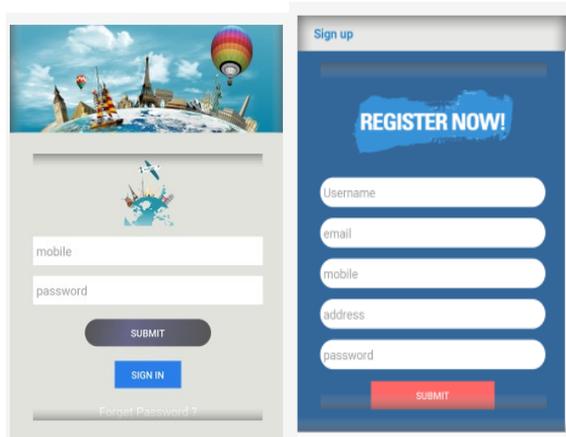


Fig 1: login/register page

Figure1: shows the login and register page where the registered users can log in or new users can sign up themselves to login to the application. To login the mobile number and password of the user is required. To register the users have to provide details like name, emailid, mobile number and create a new password.

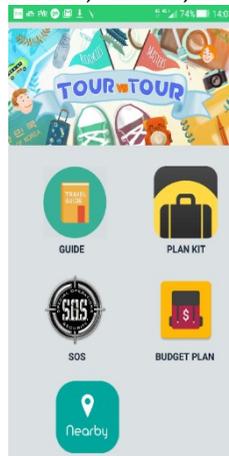


Fig 2: home page

Figure 2: shows the home page of the app consisting the modules that are real time tour guide, budget planner SOS emergency calls, nearby locations. It directs users to different needs. Once logged in the user gets to have access to these pages.

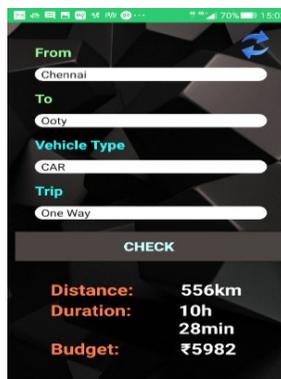


Fig-3 budget pre-analysis

Figure-3: shows the total distance, time and budget estimation for the tour based on the source, destination, vehicle type, trip calculations. The user provides the inputs according to pre-planned situation and obtains the result.

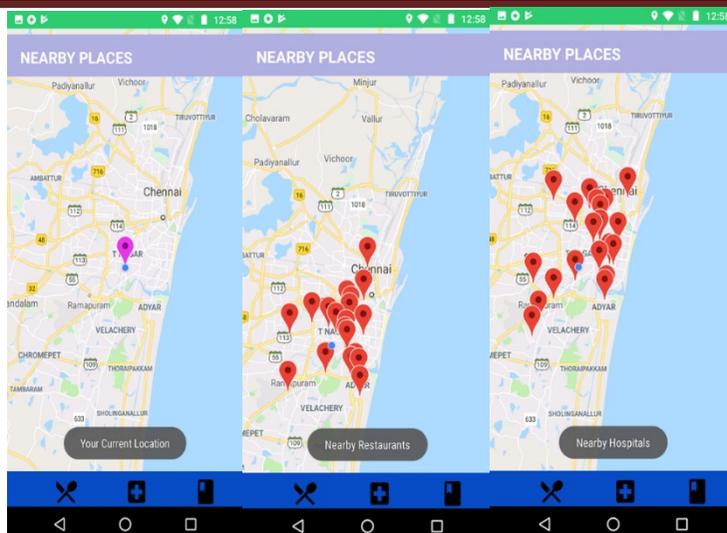


Fig-4 Nearby locations

Figure 4: shows the page for the nearby locations.it is powered by google maps. once the user’s location has been found by the system, it enables user to obtain the list of important amenities nearby.

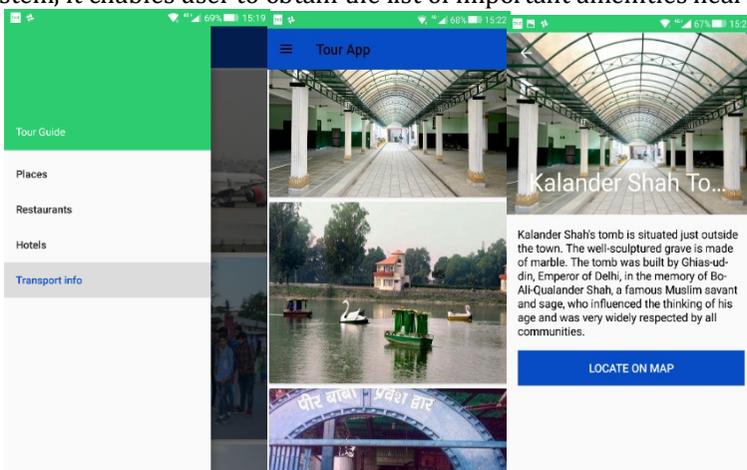


Fig-5 tour guide

Figure-5: shows the tour guide page that give a list of places to visit along with the popular hotels to stay and restaurants to dine in the new tourist spot visited. The famous places to visit along with its history, feature to locate in google map is also provided.



Fig-6 SOS emergency

Figure-6: shows the SOS emergency page consisting the list of emergency numbers that are useful at the time of danger or any other harmful situations. The user after enabling the call permission is allowed to make use of the feature.

SQLite Android:

username	emailid	mobilenno	Address	password
rahul	Rahul101@gmail.com	9874862130	Chennai	ur123qqw
Hema	hemadsouza@gmail.com	7541369852	Hyderabad	7wertfd5a
Fenny	Fenny343@yahoo.co.in	7469864512	Bengaluru	Parrot101
Kumar Karthick	kkloveschennai@gmail.com	7451874658	Chennai	Chennaicsk3

Table 1: SQLite registered users table.

The user's details are stored in the table using SQLite queries. This table is queried for further login procedures.

source	destination	transport	trip	distance	duration	budget
chennai	ooty	car	one	556	10h 28min	5187
chennai	kodaikanal	bike	two	530	9hrs 40min	4875
bengaluru	kodaikanal	bike	one	1055	18hrs 47min	3600
hyderabad	kodaikanal	bike	two	2210	18hrs 47min	8500
hyderabad	rameshwaram	car	one	1165	18hrs 30min	6500
hyderabad	ladakh	car	one	1870	32hrs 52min	12450
mumbai	goa	car	one	600	11hrs 49min	6500
chennai	goa	car	one	909	19hrs 49min	6500
bengaluru	rameshwaram	car	two	1150	18hrs 49min	7500
chennai	ooty	flight	one	587	4hrs 2min	2500
chennai	ooty	car	one	577	10hrs 17min	10547

Table 2: the table consists of the random details about the destinations reached by different people from different place at various times.

These details are used in finding optimized solutions to the user regarding his query. Once the user inputs his source, destination, trip, mode of transport the system uses the above table to find the optimized estimation of time taken, distance covered, expenses in reaching the destination from the source. This is done by implementing the apriori algorithm. The algorithm gives the best estimate by finding the frequent number of values that have been measured from the given set of data.

V. CONCLUSION

The conclusion of this project can be analyzes the reduction Multi source-destination path by means of the projectedanswer. The simulations supported knowledge sets valuate the procedure efficiency of the planned answer. The key service of an agency is to produce stress-free and hassle - free jaunt to the person.Finally an important concern for a travel agency to deliver enough info to the consumer so that the consuer is not embitteredand this is conceived through this application.

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