

TOURIST PLACE RECOMMENDATION SYSTEM

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ABSTRACT

Android Phone has power to access or fetch data from remote location and provide various facilities to the user. Hence android applications have more and more demand because of its user friendly nature and its power of computation. Many tourists are having problem to search proper tourist places due to communication overhead or less facility of tourist guide. It is impractical to search each and every tourist place at every location. So in order to provide feasible as well as user friendly solution for this problem we develop an android application which will automatically recognize famous and nearby places and send notification to android phone. This application also provides weather recommendation feature which notifies the tourist about weather conditions of the destination before visiting it. All places are properly categorized and also with rating. The application also provides facility of vehicle mark to reach your vehicle after site visit. We are using Triangulation method with GPS to track the location of user. And as per his location, relevant list of tourist places will be send to the tourist.

Key Words- Recommendations, GPS, Tourism, Rating, geofence.

I. INTRODUCTION

This application is intended for tourist those want visit places with the use of android phone. This may also be useful to those who want to visit nearby places and working on similar projects. It is assumed that the reader is aware of using smart phone and familiar with graphical user interface of android operating system.

The purpose is to make an interactive system that helps tourist to identify tourist location and recommend places they would like to visit. An android application which will show nearest as well as categorized tourist visiting places with rating. This application provides descriptions about places in the form of notifications send by our system.

Users are tracked using GPS and getting current location. After getting current position, system will recommend nearby places. User will be notified with weather of selected place. Application will suggest assets according to weather conditions. Application gives the brief information about the places.

User can also view the places as per the time of the day and can decide which place wants to visit. Using Android application tourist can easily decide the place to visit based on rating of that place. This system is very user friendly because most of the things are done automatically.

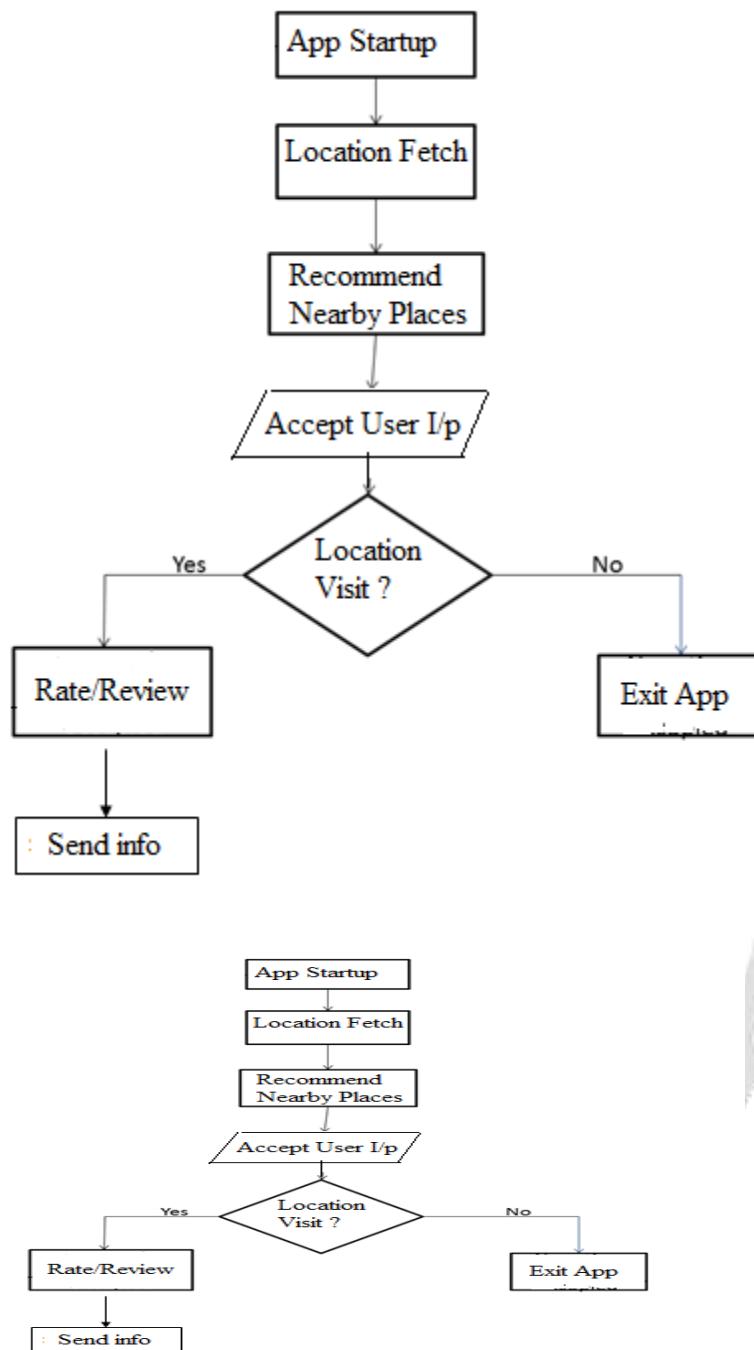


Fig. 1 Flowchart

II. LITERATURE SURVEY

This section includes the work done on related topics by various researchers. Following is the brief description of some of them:

Artem Umanets, Artur Ferreira, Nuno Leite[1] proposed a paper in which development and the key features of a tourist guide, named GuideMe, with a mobile and Web application. The service offers a set of search filters to facilitate the exploration of new locations. Facebook and Twitter social services are integrated in the service, allowing for users of these social services to easily register as a new user or to login into the GuideMe service. Thus, it is possible to follow a user

directly through the GuideMe service. The system suggests new locations based on both the user's past actions and its current location. It takes into account the preferences of other users. Users provide information regarding the locations that they visit. The recommendation process can be done through the analysis of the items characteristics, named as content-based filtering (CBF). Another approach, designated as collaborative filtering (CF), use evaluations about items done by other users. They choose to implement the IBCF method for the GuideMe RS.

Wahidah Husain and Lam Yih Dih. [3] Did comparative study of available recommender systems and location-based services (LBS) to explore the different methods to recommender systems and LBS technology. The effectiveness of the system based on the proposed framework is tested using various scenarios which might be faced by users. Location Based Services (LBS) solutions deliver relevant information according to the user's current location using position information. LBS can retrieve the user's location through any Global Positioning System (GPS)-enabled mobile phone, through the location services provided by the mobile operator, or through WiFi positioning technologies. The technologies used in LBS are positioning technology, Geographic Information System (GIS) technology and Location Management Functions. Positioning technologies are used to identify the position of the client-side device. GIS provides map and geographical data such as the locations of buildings, streets, mountains, rivers, etc. Location management functions manage and process the position information and GIS data.

Liangliang Cao, Jiebo Luo, Andrew Gallagher, Xin Jin, Jiawei Han and Thomas S. Huang [5] build a system to suggest tourist destinations based on visual matching and minimal user input. A user can provide either a photo of the desired keyword describing the place of interest, and the system will look into its database for places that share the visual characteristics. To that end, we first cluster large-scale geotagged web photo collection into groups by location. Tourist destination recommendations are produced by comparison of query against the representative tags or representation of images under the premise of "if you like that place, you may also like these places". To cluster the geotagged photos, we consider the mean shift GPS algorithm for the GPS coordinates. Mean shift clustering is a nonparametric method which does not require specifying the number of clusters, and does not assume the shape of the clusters. Starting from a given sample x , Mean shift looks for the vector

$$m(x) = P_i(x|g_i) \times P_i(g_i)$$

where g_i is the local kernel density function in the form of

$$g_i = \frac{g\left[\frac{x - x_i}{h}\right]}{2}$$

where g should be a nonnegative, non increasing, and piecewise continuous function.

Daniar Asanov [7] proposed a paper on different approaches and algorithms of data filtering and recommendations giving. In this paper we describe traditional approaches and explain what kind of modern approaches have been developed. All the paper long we will try to explain approaches and their problems based on movies recommendations. In the end we will show the main challenges recommender systems come across. It contains information about Content-based filtering and Collaborative filtering. Going in details of methods of collaborative filtering we can distinguish most popular approaches: user-based, item-based and model-based approaches.

Dan Pescaru and Daniel-Ioan Curiac [6] proposed next step of localization algorithm is based on the well-known triangulation method. Triangulation is the process of determining the location of a point by measuring angles to it from other two points whose position on a map is known. In case of more than two reference points, triangulation could be applied repetitively on all possible pairs formed by two distinctive points in order to decrease the error by averaging the results. Triangulation method is important to calculate the exact location of required place using GPS.

Subramaniaswamy V, Vijayakumar V, Logesh R and Indragandhi V [10] proposed a probabilistic travel recommendation model which retrieve automatically mined knowledge from user contributed photo tags and detected people attributes, travel group types and travel group season in photo contents. For future work, they implement real time application for Intelligent travel recommendation that will mine user's preferences from user contributed photo tags and recommend location to users. They adopt Bayesian learning model as recommendation model. Bayes theorem states that the probability that the location L_j is suggested destination given a start location L_i and attribute value PR_u of a specific user u is

$$(Equation 1) \quad P\left[\frac{L_i \geq j}{PR_u}\right] = P\left[\frac{P(L_i \geq j, PR_u)}{P(PR_u)}\right]$$

L_i is starting location L_j is ending location to predict the location L_j probabilities that the user might like to visit from a location L_i . To calculate L_j equation 1 can further be transformed into following equation

$$(Equation 2) \quad P \left[\frac{L_i \geq j}{PRu} \right] = \frac{P[L_i] \times P \left[\frac{L_j}{L_i} \right] \times P \left[\frac{PRu}{L_i \geq j} \right]}{P[PRu]}$$

III. PROPOSED METHODOLOGY

In this paper we have studied different methodologies which can be useful to complete the given problem. Recent research in computer vision has increasingly focused on building systems for observing humans and understanding their appearance, movements, and activities, providing advanced interfaces for interacting with humans, and creating realistic models of humans for various purposes. In order for any of these systems to function, they require to track exact location of User. System will provide classified view for searching places with rating and reviews. As well as allow the user to rate the places. System will also show weather condition of selected spot, suggest required things (like cap, umbrella, and sunglasses). Show nearby sub places, give the information in terms of notification (history etc.)

System is allowing the user to login via Gmail for the first time, after system will automatically login the user.

System is getting the current position using GPS; also it will show the path for selected place by tourist. The system is also providing the filters for classified view according to the time of day, eg -best places to visit at night.

System is showing full profile about places. Profile contains description about the place, time to visit (eg - day or night), rating of that place rate by other tourist, distance from current location, duration to reach to the particular place, and weather condition of destination place (minimum temperature, maximum temperature, humidity, wind). It also provides a list of thing a tourist has to carry before reached the place.

After tourist reaches to the particular place, system is provides the notification, after clicking on that notification system will the tourist to rate the place. This rating will be use as a recommendation for other user. This system is avoiding the issue of fake rating because the system is allowing to rate the place only after user reached to that place.

System is also provide option to capture images and video, and asking user to either upload it to the database so that other user can see it or to share to the particular user or friend via Bluetooth, facebook, whatsapp etc.

IV. ADVANTAGES OF PROPOSED SYSTEM

1. This is Android application, most of the user using and familiar with Android application so it is easy to use.
2. The user can get accurate recommendation because of System is avoiding the issue of fake rating.
3. The application is design in such way that most of things are done automatically, so that user can enjoy their trip.
4. User can get idea about weather, distance, duration of selected place and can prepare them according to that.
5. User can also share and upload photos, so that other user can view it and decide whether to go.

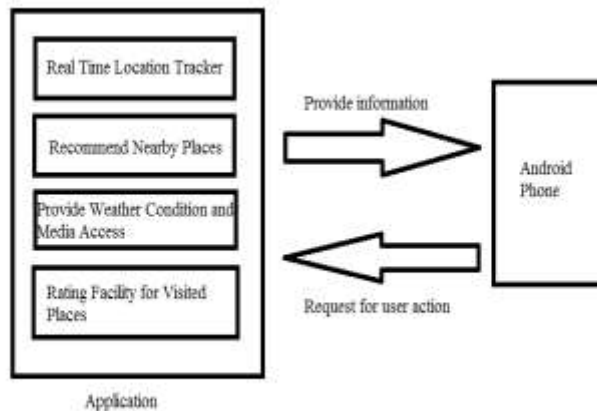


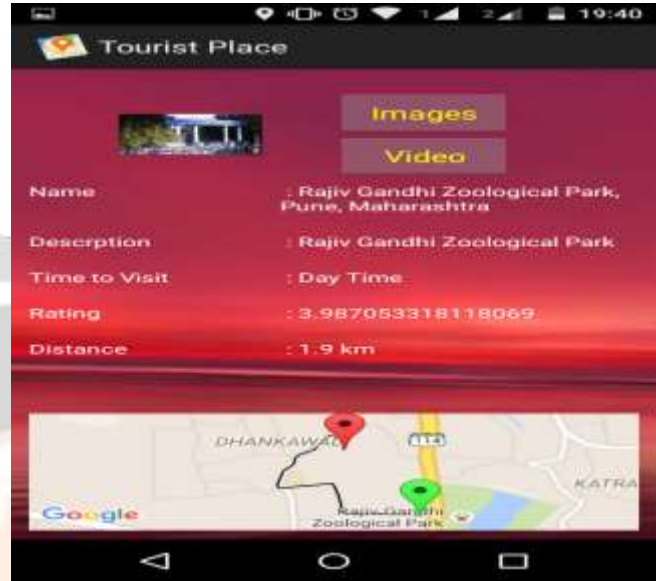
Fig. 2 Proposed System Architecture

V. IMPLEMENTATION

First page



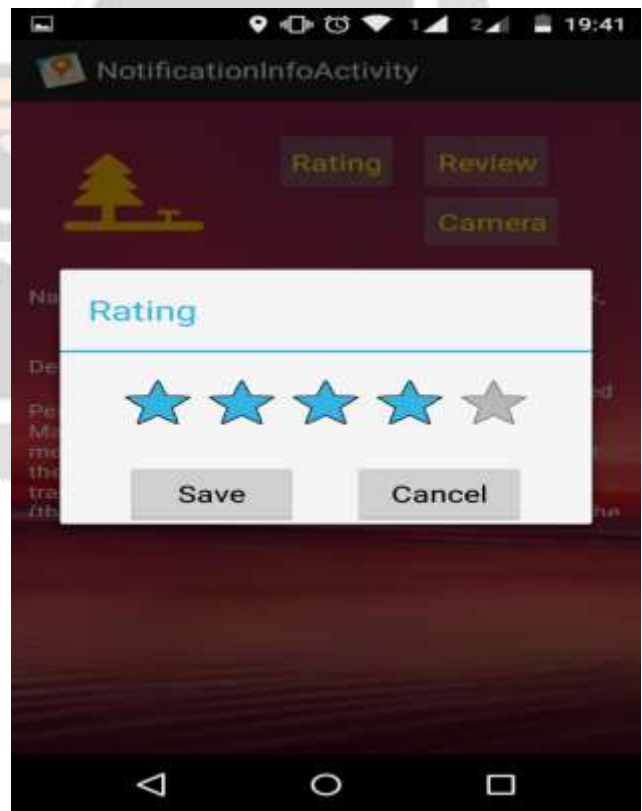
Profile



Location track



Rating



VI. CONCLUSION

This 'Tourist Place recommendation System' application provides recommendations to the tourists of the nearby locations worth visiting automatically without the need to search for the locations explicitly. The system provides information about the locations in the form of notifications and also provides the shortest path to reach the destination location. The application also provides information about the weather conditions of a location the tourist wants to visit and recommends him/her to take the appropriate accessories according to the weather.

VII. FUTURE SCOPE

In future this application can be expanded to provide more accurate results by providing recommendations based on climate. We can also apply text mining on the review written by people and can get more exact recommendation

After going through the surveying, it can be gathered that there is a huge scope of application development in mobile domain. Following the same notion, we can also develop application that can tackle following issues:

- 1) Location positioning technologies
- 2) Query processing
- 3) Cache management

VIII. ACKNOWLEDGMENT

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