INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH

IN COMPUTER & COMMUNICATION ENGINEERING

INTERNATIONAL STANDARD SERIAL NUMBER INDIA

Impact Factor: 7.542

A Review on Tourism Recommendation System Using Geo Fence

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ABSTRACT: Now a days, implemented different software applications to increase user engagement. Recently, recommendation Systems have become an active topic. In the past few years, with the proliferation of mobile devices people are experiencing frequent communication and information exchange. For instance, in the context of tourist visits, it is often the case that each person carries out a Smartphone, to get information about touristic places. When one visits some location, a tourist guide application will recommend useful information, according to its current location, preferences, and past visits. Afterwards, the tourist guide allows for the user to provide feedback about each visit. Its mobile and Web applications provide consultation, publication, and recommendation of touristic locations. Each user may consult places of touristic interest, receive suggestions of previously unseen touristic places according to other user's recommendations, and to perform its own recommendations. Nowadays, recommender systems are present in many daily activities such as online shop-ping, browsing social networks, etc. Rapid growth of web and its applications has created a colossal im- portance for recommender systems. Being applied in various domains, recommender systems were designed to generate suggestions such as items or services based on user interests. The recommender system is constructed as an online application which is capable of generating a personalized list of preference attractions for the tourist. The purpose of the study is to design and develop a Tourism Recommended System, which utilizes a hybrid recommendation filtering for the smart tourism industry.

KEYWORDS: Recommendation System, Tourism, Tourist

I. INTRODUCTION

Every day, many people visit well-known tourist locations around the world. How- ever, many unknown places deserve to be visited but people don't know about their existence, due to the lack of public information. Many points of interest may be located within a range of dozens of kilo-meters from our homes, but usually we prefer to travel hundreds or even thousands of kilo-meters to visit some other well-known locations. Recently, with the proliferation of Smart phone and social networks, people got closer. Usually, people carry out a mobile device, being able to gather information about their surroundings, which is used by the so-called tourist guide applications to suggest tourist attractions, based on context factors such as location and weather conditions. In this paper, we address the development and the key features of a tourist guide, named Tourism Recommendation System, with a mobile and a Web application that allows for users to consult places of tourist interest. The system offers a various kind of search filters to facilitate the recommendation of places. In order to easily attract new users. Users give their input regarding the places that they want to visit. The Recommendation System uses this information to suggest a list, sorted by decreasing preference, of new places of interest to other users. Currently, there is no interaction between the Recommendation System and the supported social services. Recommender system provides with the options of the places using the input of the users.

II. RELATED WORK

As an algorithm we have proposed Geo-Fence algorithm.

The following Fig. 1 shows basic process of detecting whether the point of interest (POI) is within the range of geofence or is it out of the range. We've used TWC for geo-fence.
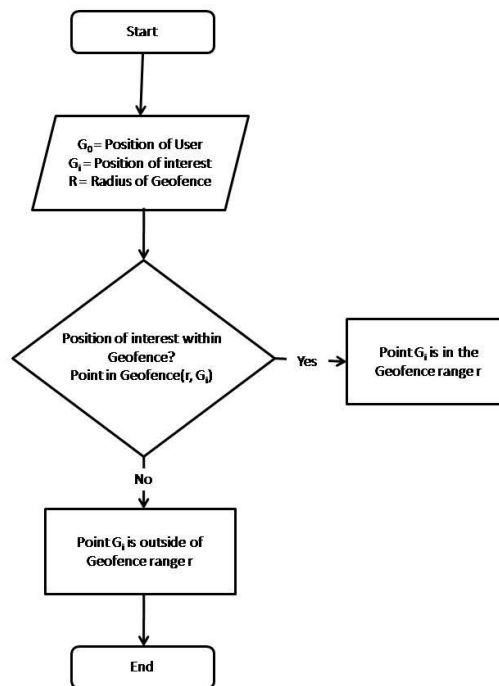
Figure 1. Point in Geo-Fencce flowchart

Triangle Weight Characterization (TWC), has a initialization step and a run with the time step as shown in Algorithm of ahead. The initialization step has to be executed for all keeping in and keeping out geofences when the system first begins or starts. If there are any changes to any of the geofence boundaries after the original initialization, each keeping in and keeping out geofence that is changed must be start or begin again.

Algorithm for TWC:
Input:
    p is a simple polygon
    G_i is the position of
interest Output:
    true if p contains G_i, otherwise false
Initialization:
    1: Divide p to m y-monotone polygons
    2: for all y-monotone polygons M in p do
    3: Divide polygon M to n triangle
    4: end for
Run-Time:
    5: for all N triangles in p do
    6: if N contains G_i then
    7: return true
    8: end if
    9: end for
10: return false

The initialization step subdivides each of the original geofences from simple polygons to y- monotone polygons and then to triangles.The run-time step checks whether the position of interest is within each triangle. If the position of interest is inside any of the triangles, then it is in the boundary of that polygon. Otherwise, it is outside the polygon.

III. OBJECTIVES

The goal is to design a recommendation system which will not only provide the users with recommendation based on their interests but also has the hybrid filteration ways to make the system even more effective.Following objectives are proposed for the project:

To develop a Tourism Recommendation System based on their interests and past records.

1) To provide a platform for tourists to explore the places they will be satisfied for.
2) To promote tourism.
3) To provide the number of affordable alternatives to tourists regarding their area of interests.
4) To provide short and easier approach to tourists to get what they want.

IV. METHODOLOGY

The system is designed as a software solution on mobile. It's a mobile application. There are two modules for the system. One is web and the other one is the mobile. Web module isexclusive to the admins while the mobile model is for the users. Fig.1 shows the basic layout of the system and how it is designed. When opening the app user will be showed the login and registration page. If user has an existing account already registered, then user will can directly log in. If user doesn't have an existing account then they can register and make a new account. While registering the new account the user will give their personal information such as their name, gender, address, mail ID etc. Then user will be showed various place types such as religious, adventure or historical. User will give their interest and that's how registration will be done.
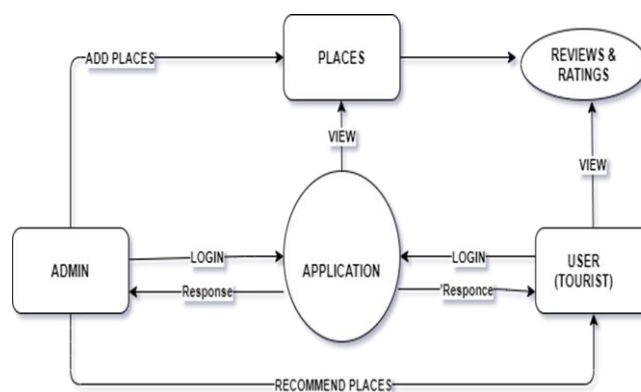

Figure 2. DFD Diagram

After logging in the users will be displayed with the dashboard of the app. In the dashboard the recommended places will be showed as marked by the user in the interests. The city in which the user currently in will be showed by default and all the recommended places of that city will be displayed.
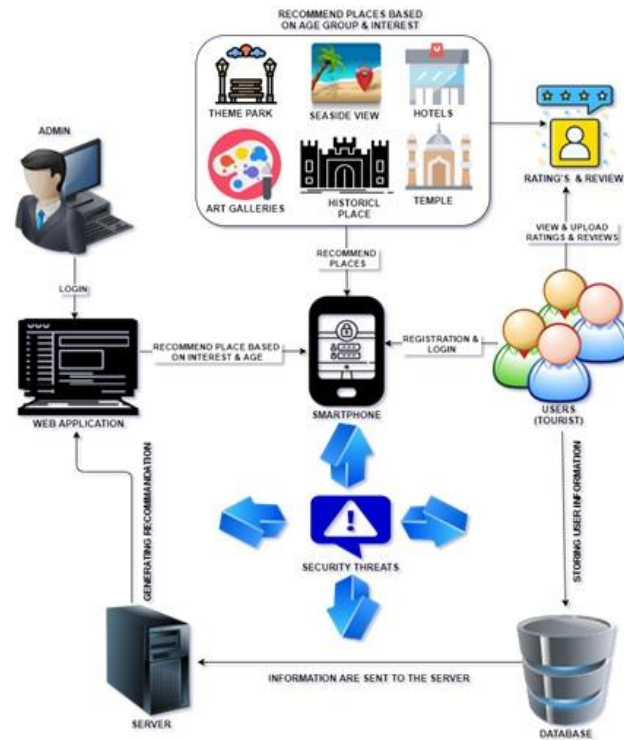
Figure 3. System Architecture

The way system works is that there are 3 different and distinct ways that user will be see the recommended places. First one is by city, the second one is by the interest and the third one is by the age group. In the first one all types of tourism places will be showed from that city. From religious places to historical to resorts etc. If user enters another city name here then they'll be showed the places from the city they have entered. So the first way of filtering is by cities. The second is by the interests. As user can give their interests such as where they want to visit. If user enters historical here, then they'll be showed all historical places irrespective of their cities. Same goes for other type of places such as restaurants or adventure places. The third filtering technique is by the age group. If user enters their age group say 18-35 then they'll be showed the places based on their age group. There are some places that'll attract the young demograph rather that the old demograph based on that results will be showed. Along with the places, User will be showed the pictures of the place, it's distinct website for basic information or for booking purposes and the direction of the place based on the map. Along with this the user can also write review for the place so that it'll be better for other users to gain more information about the place. Fig 3 system diagram shows all the sections and concepts that are elaborated here.
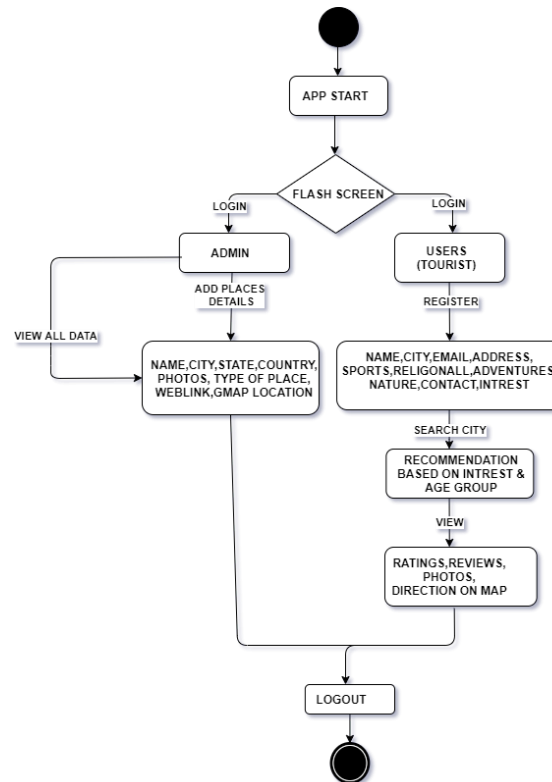
Figure 4. Flowchart of system

V. OUTCOMES

The recommendation system will provide users with a list of places curated and based on their interests. The system will show other tourism attraction too based on the recommendations. Based on the filtering techniques users will not only be provided with the most suitable places for them but also they can give their input and opinion though reviews and make the system even more relatable and effective.

VI. CONCLUSION AND FUTURE WORK

Web-based applications, informative sites etc. have been seen as an application for recommendation. If there is a platform that provides the recommendation as well as the places information, then it will really be preferable. Especially in country blessed with beauty ,but with very few information on the web, this system can appear as a boon of people eager to know about and travel here to get hypnotized in its beauty And what can be more rejoiceful when the system comes with such recommendation for place to be visited based on interests along with past records?? Similarly, the records possessed and extraction of information hidden within them just adds a flavor both to tourists and the authorities over here. With all these features place into one, and with feasibility of rating the places visited, what can a Tourist ask for more than being his travel agent on his own? Hence the scope of this system can be seen broad with a need to be used and implemented for boosting tourism as well as to extract useful information to be used further from the data we have. Future scope involves the implementation of this system through the different regional tourism companies in world, and the testing of its efficiency with tourists interested in carrying out activities related to the wine sector in this region. Therefore, the objective of succeeding would be the satisfaction level of visitors during their trip, and the capability nature of the system to work efficiently so that tourism will blossom over the coming years".

The tourist recommendation system provides recommendation to it's users to find favorable tourist places. The system gives the information about location nearest recommended places, and find distance between my locations to destination. With the usage of this app, the user can find their recommended places with the assist of preferences and inputs provided by the user. Possibilities of tourism development, recommender system has been an area of so much of interest. As a result a number of organizations are being involved in tourism industry needs to have this system. The project has been very helpful in publishing the skills in the field of Tourism Recommendation System. The objective of the project is to find out the unexplored places in World to increase the tourism in the world and also recommend them as per their interest.

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