PERSONALIZED TOUR RECOMMENDATION SYSTEM

Poonam Chopade, Student,
Department of Information Technology
SIES Graduate School of Technology,
University of Mumbai, Nerul-400706, Maharashtra

Seema Redekar, Assistant Professor,
Department of Information Technology
SIES Graduate School of Technology
University of Mumbai, Nerul-400706, Maharashtra

Stephy Benny, Assistant Professor,
Department of Information Technology
SIES Graduate School of Technology
University of Mumbai, Nerul-400706, Maharashtra

Meenakshi Iyer, Student,
Department of Information Technology
SIES Graduate School of Technology
University of Mumbai, Nerul-400706, Maharashtra

Priya Mishra, Student,
Department of Information Technology
SIES Graduate School of Technology
University of Mumbai, Nerul-400706, Maharashtra

Pradnya Shelage, Student,
Department of Information Technology
SIES Graduate School of Technology
University of Mumbai, Nerul-400706, Maharashtra

Abstract: Touring is a popular but time-consuming activity, due to the need to identify interesting attractions or Places-of-Interest (POIs) and plan these Places-of-Interest in the form of a tour itinerary. To solve this challenge, we propose the Personalized Tour Recommendation and Planning system. The Personalized Tour Recommendation and Planning system is able to plan for a customized tour itinerary where the recommended Places-Of-Interest are personalized based on the tourist's interest preferences. In addition, tourists have the option to indicate their trip constraint that is the starting point to further customize their tour itinerary. This framework can get ready for a modified visit schedule where the prescribed POIs and visit lengths are customized in light of the tourist's advantage inclinations. We propose a personalized tour recommendation system that considers a user's interest preferences in specific categories, which would consider their overall interests. In this frame work we have used three baseline algorithms Greedy Random, Greedy Popular and Greedy Nearest. As a result this system is able to recommend nearby places as per user's search interest of places and it also recommends nearby hotels of the respective places.

Index Terms - Tour Recommendation; Recommendation System;

I. INTRODUCTION

Nowadays, many people rely on online services to plan a trip. However, they are usually faced with the problem of being supplied with lots of information. In consequence, they have to invest a great deal of time to decide what to visit and when, etc. This huge amount of possibilities available on the net makes it difficult for users to discern the more interesting offers from the rest. As a result, the more appealing offers can go unnoticed. In order to improve the tourist experience, recommender systems offer personalized information to users. In other words, the system selects the more suitable and adequate offers for users and offers activities appropriate to their profile. The large amount of information about tourism and leisure activities available on the Web has

made the preparation of a trip into a very challenging task, ripe for the application of recommender systems. Travelers' are very eager on using tools that may support their decision making processes when they are planning to travel, including the choice of destination they want to visit, the selection of attractions to visit, the construction of a multiple-day plan, the suggestion of appropriate accommodations and restaurants, etc. Complex problems such as automated planning, semantic knowledge management, group recommendation or context-awareness have by now been largely studied in this area. Classical recommender systems try to remove the domain items that may be more relevant for a particular user, given her demographic data, her past ratings or purchasing history and her preferences. This approach can be very suitable to recommend specific items such as books, songs or films. However, travelling is an activity that is usually carried out in groups of people (couple, friends, family and colleagues) thus, it is necessary to take into accounts the preferences and tastes of all the travelers when providing recommendations. When traveler visit to some place they also search for some hotels, so we are also recommending nearby hotels to our users. Client setting might be their type of area, their cost, and the time. The client's advantages are caught in their profile, their past movement history, and by giving criticism about things in their movement history. In this paper, we introduce an advanced tour recommendation system, which includes the extraction of famous spots based on the visibility along a route. Our visit suggestion issue is demonstrated utilizing a definition of the Orienteering issue, and considers client trip requirements, for example, his POI interest, number of days, food he like, etc. In our work, we likewise reflect levels of client intrigue in view of visit terms, and illustrate how POI visit term can be customized utilizing this attributes like user interest POI, user history and other interest of user like food based on this we will recommend the nearby hotel of visited place.

II. RELATED WORKS

A. EXISTING SYSTEM

Planning the order of places that tourist like to visit is a complex problem that has received a great deal of importance in the last years.

1. Tour Plan with Public Transportation:

This paper presented by Kurata et al.[1] in his workshop CT Planner5, which is the latest version of the well-known CT-Planner. The system engages with the user in a continuous process to construct a route. The user keeps on filtering constraints iteratively, until the system can build and showcase a satisfying plan. It can also provide degrees of interest on nature, culture, art, shopping or entertainment activities. The user can also request more detailed requirements such as the addition of popular attractions or the inclusion of activities for children.

The use of semantic domain knowledge in the recommendation process, usually represented in the form of ontology, has heavily increased in recent years as exemplified by three of the works presented in the workshop. Borrs et al.proposed a system in order to improve the diversity of the results provided by the SigTurrecommender by using a semantic clustering procedure. The semantic similarity between two concepts is defined as the ratio between the number of different ancestors and the total number of ancestors of both concepts. The items to be recommended are clustered according to this semantic similarity and the recommendation procedure iteratively selects the best item from random clusters. It is shown that this procedure increases the diversity of the results while keeping their accuracy and an acceptable computational cost.

2. Pedestrian Navigation method for Route selection:

Another navigation system proposed by Akasaka and Onisawa [2] teaches pedestrians an appropriate route by using Sketchmap and fuzzy theory. Compared to these researches, our work focuses on the new aspect, the visibility of scenic sights for the route search. Hosokawa et al. also consider landmark visibility, but their goal is to identify a user's current location, different from our route recommendation. Google Earth and Microsoft Virtual Earth allow users to explore richer geographical contents.

3. Recommender Systems in Tourism

This system by Moreno [3] also contains ontology with information about the different kinds of tourist activities. The degree of relationship of each item with respect to each category has been automatically computed from Trip Advisor ratings. The user profile, which is being continuously updated through the analysis of the interaction of the user with the recommended items, stores a preference degree with respect to each category, which is used by a hybrid recommender system to provide the appropriate suggestions to the users. Semantic information can also be used to determine the items to be recommended in a personalized visit to a museum.

Information recommendation based on personal interests is currently an active research area. Jameson proposes a prototype of a travel decision system for dealing with item recommendation to a group of two or more users.

In today's world people are like to use new technologies while planning their trip. So it proof that internet is big part in our life. For making this, several companies and websites that offer varied tourist information at one place. The existing touristic website and companies offer this type of following characteristics:

- The entire users are symmetrically given same information regarding their profile. General and identical information is presented.
- A large amount of information is given to users so that they can select those information and process according to their interest.

Generally, the users or traveler starts from basic knowledge of the place where they want to visit or where they have interest ,either for an artists, social or leisure value they may have. Besides this, each and every person can make different profile

depending on their interest and previous history like their trips and circumstances that surround them; therefore, several profiles can be distinguished, such as cultural, gastronomic, or family profile, among others. For making system more personalized and improving tourist experiences, computer system supply personalized information based on their users history. In other words, the system selects the most suitable options from a large amount of dataset, by taking the users profile and interests into account of the users.

B. PROPSED SYSTEM

Personality we propose a system in which tourists are able to select any starting location (based on a specific POI, and also the tourist may be unfamiliar with) and our system will recommend an itinerary that starts at POI near that selected location.

The key features of our tour planner recommender system are:

- Able to consider tourist trip constraints such as starting at specific locations.(e.g., near the tourist's hotel)
- Utilizes available information to: (i) determine the popularity of POIs; (ii) determine nearest location and (iii) classify POIs into distinct categories.
- Able to recommend tours based on either POI popularity or tourist interest preferences.
- Recommendation results are displayed in an intuitive textual form. This allows for a quick overview of the tour and provides detailed information about getting from one POI to another.
- Our framework requires a list of POIs (with latitude and longitude coordinates and POI categories).

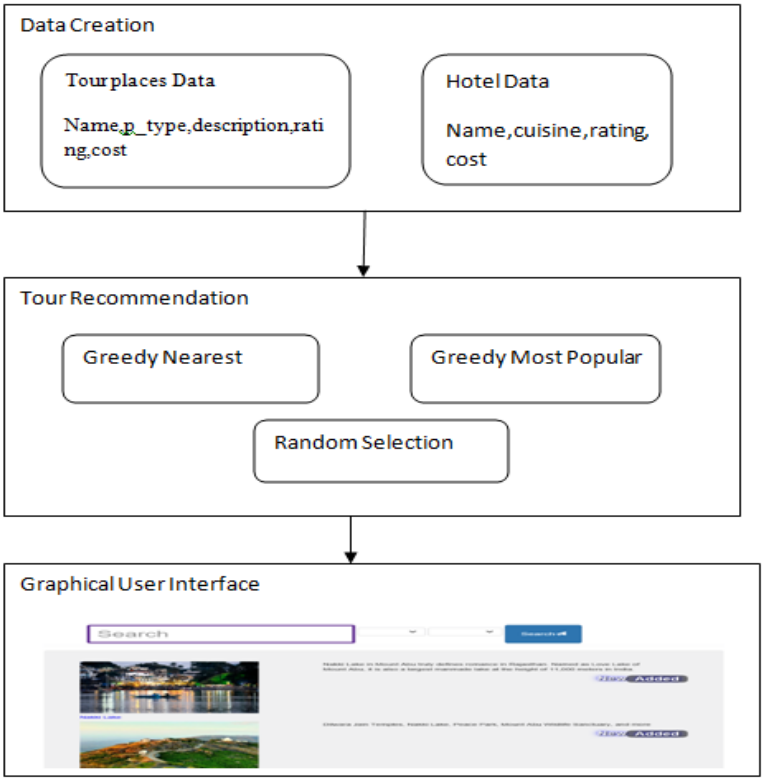

Fig 1- Architecture Diagram

1. Data Creation

Data of Tour Places and Hotels will be created manually and store in database.

2. Tour Recommendation

Three algorithms Greedy Nearest, Greedy Most Popular, Random Selection will be used for recommendation.

3. Graphical User Interface

Recommendation will be show according to person interest and nearby places and hotels are recommended.

III. METHODOLOGY

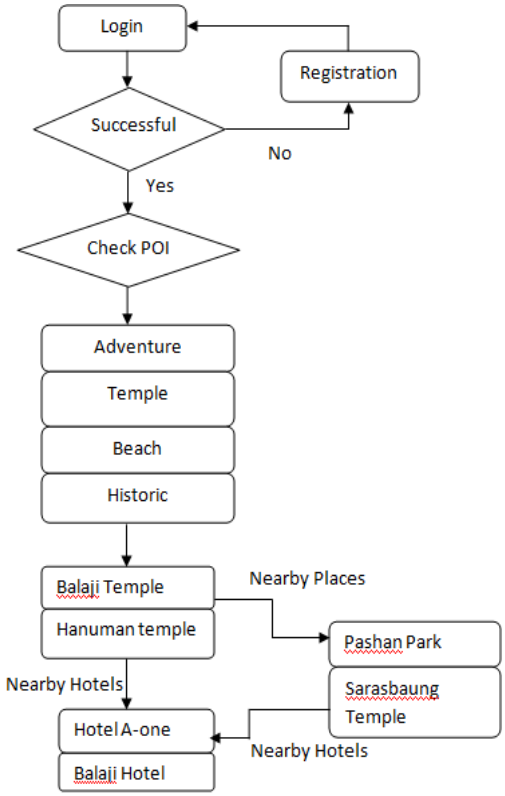

Fig. 2: Flow chart of the Application

Figure 2 shows the flowchart of the application, in this system the user registers on to the website and then after logging in searches for his place of interest he would like to visit. As a result the system displays the iternary about the place also it suggests the nearby places which the user would want to visit. Also it recommends nearby hotels to the user for their convenience.

A. SOFTWARE

1) MySQL:

MySQL is an open-source Relational Database Management System (RDBMS). It was founded by Michael Widenius[7]. It is a structured Query language. It is written in C and C++. It is broadly utilized for getting to and dealing with a database. It is planned with the end goal that it can without much of a stretch handle even substantial informational indexes. It is in all respects agreeable to PHP and is broadly utilized for advancement of Web Applications It is widely used in the world because it is free to use. It is cross platform in nature.

2) HTML

Hypertext Markup Language (HTML) is the standard markup language for creating web pages and web applications. With Cascading Style Sheets (CSS) and JavaScript, it forms a triad of cornerstone technologies for the World Wide Web.[4]
Web browsers receive HTML documents from a web server or from local storage and render the documents into multimedia web pages. HTML describes the structure of a web page semantically and originally included cues for the appearance of the document. HTML elements are the building blocks of HTML pages. With HTML constructs, images and other objects such as interactive forms may be embedded into the rendered page. HTML can embed programs written in a scripting language such as JavaScript, which affects the behavior and content of web pages. Inclusion of CSS defines the look and layout of content. The World Wide Web Consortium (W3C), maintainer of both the HTML and the CSS standards, has encouraged the use of CSS over explicit presentational HTML since 1997.

3) JScript
JScript is Microsoft's dialect of the ECMA Script standard that is used in Microsoft's Internet Explorer.
JScript is implemented as an Active Scripting engine. This means that it can be "plugged in" to OLE Automation applications that support Active Scripting, such as Internet Explorer, Active Server Pages, and Windows Script Host. It also means such applications can use multiple Active Scripting languages, e.g., JScript, VBScript or PerlScript.
JScript was first supported in the Internet Explorer 3.0 browser released in August 1996. Its most recent version is JScript 9.0, included in Internet Explorer 9.

JScript is a separate dialect, also known as JScript .NET, which adds several new features from the abandoned fourth edition of the ECMAScript standard. It must be compiled for .NET Framework version 2 or version 4, but static type annotations are optional.

IV. IMPLEMENTATION

Thereafter, the main steps in our framework are:

Step1: Creation of Datasets: Here, we have created dataset for places and hotels all over India, based on the attributes of the places(Name, Place_Type, Food, Rating, Description, latitude and longitude)and of the hotels(Name, Food, Stay_Cost, Star, Rating, latitude, longitude).

Step 2: Construct Travel History: Based on the POI, we can construct the travel history of each user by sorting their POI visits in ascending order.

Step 3: Recommend Tours using PERSTOUR: there can be different variants of PERSTOUR, based on the value of and the type of interest function chosen. The value of indicates the weight given to either POI popularity or user interest.

Three main Algorithms used are:

Greedy Nearest (GNEAR): Chooses the next POI to visit by randomly selecting from the three nearest, unvisited POIs.

Greedy Most Popular (GPOP): Chooses the next POI to visit by randomly selecting from the three most popular, unvisited POIs.

Random Selection (RAND): Chooses the next POI to visit by randomly selecting from all unvisited POIs.

V. CONCLUSION

We modelled our tour recommendation system based problem in the existing system and proposed our PERSTOUR algorithm for recommending tour to users. Our PERSTOUR algorithm considers both user interest and POI popularity to recommend suitable POI to visit based on POI rating. Our work improves upon earlier tour recommendation research in two main ways. Here, we have created dataset for places and hotels all over India, based on the attributes of the places. Based on the POI, we can construct the travel history of each user by sorting their POI visits in ascending order. We personalize POI visit duration based on the relative interest levels of individual users, instead of using the average POI visit duration for all users or not considering POI visit duration at all. There can be different variants of PERSTOUR, based on the value of and the type of interest function chosen. The value of indicates the weight given to either POI popularity or user interest.

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