

Hotel Search Using Data Mining and User Interest

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Abstract- *The use of mobile devices such as smart-phones and tablets has increased over the year as Internet becomes the important part of people's daily life. Also the way of using Internet is changed enormously. The mobile devices are capable of tracking sophisticated browsing behavior. The aim to make accurate personalized hotel recommendation according to user's interest. The user interest profile can then be obtained by deriving the features the user has shown interest through data mining techniques, including feature extraction and segmentation analysis. Then the user interest profile is employed to make personalized hotel recommendations based on the requirements of the user's preferred aspects*

Keywords- Recommendation, data mining, segmentation analysis.

I. INTRODUCTION

In today's world everyone is depend on internet. Even the traveler are also go online to check the content about hotel, travel and tourism industries. Traveler plans their trip by reading the customer reviews but some time it is not the fact. In such situations Recommendation systems are widely used to overcome the overload of information. Recommendation system actually does the information filtering. Its main function is to predict user's preference from the rating information. In General recommendation system is for selecting an item to gain the customer satisfaction. In e-commerce hotel recommendation is the legacy application. Our aim is to make an application for advance search using user behavior of browsing reviews to know the aspects preferred by user about the hotel. Then interest profile of user will be obtained by the text mining techniques including sentiment analysis. Compared to searching for normal hotel website which gives only location based recommendation our recommendation system can achieve more effectiveness by adding text mining and sentiment analysis techniques.

II. LITERATURE SURVEY

1. Keng-Pei Lin, Chia-Yu Lai et al [1] in Personalized Hotel Recommendation Using Text Mining and Mobile Browsing Tracking said that customer who rates only small objects recommendations for them become difficult,

context aware recommendation systems are introduced to solve this problem.

2. Gediminas Adomavicius and Alexander Tuzhili [3] in Context-Aware Recommender System states that in order to recommend items to users it is important to incorporate contextual information in recommendation system.
3. Long Jiang, Mo Yu, Ming Zhou et al [5] in Target-dependent Twitter Sentiment Classification propose to improve target dependent sentiment classification by using target dependent and context aware approach.
4. Dietmar Jannach, Fatih Gedikli, Zeynep Karakaya and Oliver Juwig [4] in Recommending hotels based on multi-dimensional customer ratings propose a contextual filtering recommendation approach which combines the user and item models to improve the recommendation accuracy.
5. Matthias Fuchs and Markus Zanker [2] in Multi-criteria ratings for Recommender Systems: An Empirical Analysis in the Tourism Domain analyse the multi-criteria user ratings results into significant effect in multiple models of travel segments.

III. ARCHITECTURE

In proposed system UI is design in CSS and Bootstrap. Coding is in ASP.Net and runs through IIS server. Database used is MYSQL.

Using the web application user can search the hotel as per his location and also can see the rating and cost of that particular hotel. After that based on users interest profile will be identified. If users preferred aspects match with the hotel's aspect then that hotels will be recommended for user.

Figure 1, shows the architecture diagram and Figure 2, shows the Data Flow Diagram of hotel recommendation system.

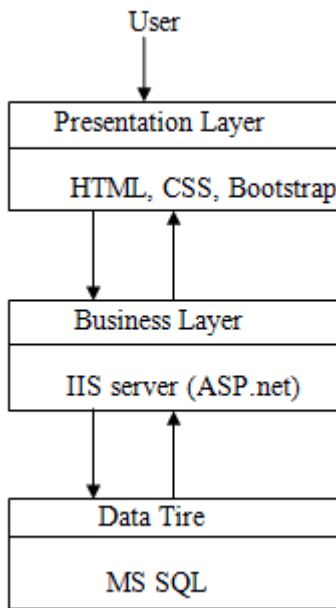


Figure 1. Architecture Diagram.

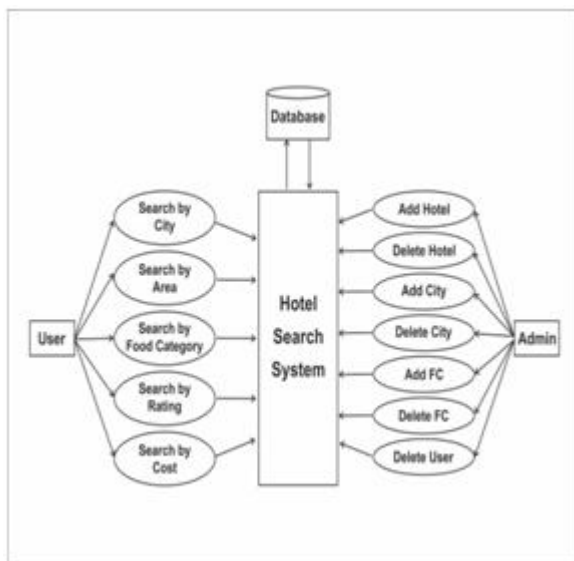


Figure 2. DFD

IV. SYSTEM MODULE DESCRIPTION

Admin:

Hotel Management-

Admin register the hotel with its famous food category. Adding on hotel, admin need to feel the details like Hotel name, city, area, famous food, image, cost. So that hotel can search hotel by location and food type. Only can registered hotel will be displayed in the application.

Admin also can delete the added hotel.

Example, Pandit Hotel

Food Category Management-

Admin have authority to add food category type. Also can delete the food category.

Example, Gujarathi, Maharashtrian

City Management-

Admin can add and delete the city.

Example, Mumbai

User Management-

Admin can only delete the user.

User:

In this module user have to register first then only can user can able to login in to application and use it. For registration user have to fill personal information like user name , Email Id. This registration information get stored in to database. Auto generated password with random letters is pop up into password field. User can login through mention username and password.

User can search hotel by city, area and food category type.

V. RESULT AND DISCUSSION

In existing system not produce accurate result in review mining. It produce same result in different situation which is not helpful user prospective. Review mining result not produce according user requirement it produce result according system query .ex. In review mining in hotel search it produce result according hotel ranking not according user condition ex. location, rent, food, rating .etc parameter.

Mining systems provide the capability of discovering more than one type of pattern so that the users are able to toggle between displays of the different types of patterns for a given concept.

Hence in proposed system user can get the result according to his condition.

In proposed system, Segmentation algorithm also called the clustering is used. The aim of clustering is, grouping

a set of objects in order to find whether there is any relationship between them.

In proposed system clustering done on the city of hotel, Area of City, Food category of that hotel. Example for, made the clusters for all hotel by their city e.g. Mumbai.

After made the cluster for Food category of each hotel e.g. Maharatrian.

Finally cluster is created for the Area.

In this way user gets the proper result for City he want with the food type of his choice also the area of his comfort.

In this, Segmentation algorithm, using clustering we are getting exact results. Also speed of getting result is very fast than classification algorithm. Clustering is an unsupervised learning technique used to group similar instances on the basis of features.

Statistical concepts are used, and datasets are split into subsets with similar features. Classification is a supervised learning technique used to assign predefined tags to instances on the basis of features. Classification uses the algorithms to categorize the new data according to the observations of the training set. Using this clustering or segmentation data mining algorithm in our project it is easy to find the hotel based on city, area, food category type and rating of the hotel. Clustering and classification can seem similar because both data mining algorithms divide the data set into subsets, but they are two different learning techniques, used in data mining for the purpose of getting reliable information from a collection of raw data.

VI. SCREENSHOTS



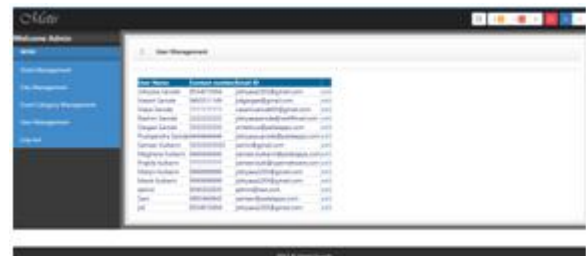
1)User-Hotel Search



2) User-View Hotel



3) Admin-Add Hotel



4) Admin- Add food Category



5) Admin-User Management

VII. CONCLUSION

In this proposed system hotel recommendation done using user behaviour and hotel can sort by cost and rating. Also user can search the hotel by city, area and food category type. Most of the hotel websites only list the rating rather than the user preferences and reviews of reviewers. Through our work we propose that location based, food category based and rating based are important factors for good hotel recommendation.

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