

Place Recommendation System

Priyanka S.Khorgade¹ Rupali S.Mhaisne² Shubham R.Charkolu³ Prof. V. B. Bhagat⁴

^{1,2,3}P.R.Pote COE, Amravati, India ⁴SGBAU University

Abstract— This paper focuses on developing associate android application which may be used for recommending places to the user based on current GPS location. For this we use user primarily based collaborative filtering algorithmic program that evaluates places based on user's current location, check-in's and preferences. Cooperative filtering algorithmic program is employed to suggest nearest and best places to the users from the device. For the purpose of recommendation, we have a tendency to use a self-driven database for information of places which contains real-world check-in spots. Our objective is to extract information about a place and suggest user their place of interest based on their ratings and system algorithmic program.

Key words: Collaborative Filtering

I. INTRODUCTION

With the advances in technology, use of good phone has increased multifold. because of easy accessibility to internet on handhelds use of location primarily based application on mobile phone are in trend. Location primarily based applications make use of this GPS location and list nearby places around a definite radius. as an example, user will read shopping malls, film theatres, restaurants, etc. once during a range of few kilometers to those places.

Despite the usage of such applications steady increasing, the quantity of check-in spots have additionally been increasing in the recent years that creates lots of confusion amongst the users as to that place they'd like and enjoy. Therefore, this paper 'Place Recommendation System' is developed to reduce the confusions of the users and helps them by recommending their place of interests. This application is employed to recommend places to the users according to his\her style and preferences, considering his previous check-ins, likes and dislikes. This application also considers the likings of different users round the targeted user's location and recommends the targeted user with the places around him\her. Hence, this application recommends places to the users using these two ways that. For the recommendation part, this application uses user-based cooperative filtering rule that helps in sorting places and listing them to the users, as mentioned earlier.

For the information of places, this project uses a self-driven info whereby, the database is formed and updated by the admin. Self-driven database is employed so the knowledge of even the smallest, not so very celebrated outlets and places can also be listed to the user in recommendation part. Also, this database can be any changed recurrently to update information about the new places. Therefore, this application will provide nice help to the local users by property them grasp places which they're not aware about, also the tourists by listing and recommending them with tourist attraction places and places of basic needs such as medical stores, fuel pumps, banks, etc.

II. NEED OF THE PROPOSED SYSTEM

On a day to day local users notice it difficult to search places of basic needs whenever they're in new place, this application helps local users to identify places of their want, taste and preferences. Additionally this application helps tourists to return across language barrier and find to go to tourist spots whenever during a new town. This application performs tasks such as to search out all the possible results, user will view all the local restaurant, hospitals, medical shops etc. inside few kilometers range. Recommender system can judge engaging places supported their ratings that are keep within the information that is made by admin.

III. DISADVANTAGES OF EXISTING SYSTEM

Existing system takes ratings from different websites or surveys which may not be fully genuine, whereas this method evaluates ratings and recommendation directly from the users itself. during this system there square measure 2 styles of recommendations that may be performed whereas existing system has just one reasonably recommendation. Existing system takes longer to respond whereas, this application is a lot of responsive & time efficient. Existing systems may not have data regarding all the smaller shops and places whereas, this application even lists you those places.

IV. PROPOSED SYSTEM

Place recommendation application helps not only the tourists but also local users to search out places with interests & preferences. The planned place recommendation application is impressed by the increasing variety of users round the world. we have a tendency to implement an application which may be used as a service to Smartphone users. For this we use android Studio & SDK tools for the implementation of the system. To implement system, we use the self-driven information to induce information of places all around. This application works on location of the user & recommends places on the idea of the local spots & user check-in records. For this it uses user based mostly cooperative filtering algorithm to assist suggest places to the users appropriately. This rule works by grouping places with similar traits during a single section. For Eg. 'Monginis' & 'Merwans' are clubbed underneath 'Cake shop' which may any be sorted underneath 'Restaurants'. By using this classification, the user location, user's check-in records the algorithm the user is suggested with places according to the mobile device location.

V. SOFTWARE REQUIREMENTS

- WAMP: Web Application Server, you need to have this since you have to use your system as a server and run the PHP applications.
- PHP: Server Side Scripting Language.

- MySQL: Database, to perform the tasks related to database in the web applications.
- XHTML: Extensible Hypertext Markup Language is required. Having known this scripting language, PHP coding would be easier.

VI. METHODOLOGY

Android is an open supply operating system and therefore the devices that runs the android applications works on any of the mobile devices that supports android operating system. android may be a Linux-based, open supply mobile operating system used for developing apps for android devices. to begin with, one must transfer and install android SDK.

Platforms to run Android:

- 1) Microsoft Windows XP or later version.
- 2) Mac OS X 10.5.8 or later version with Intel chip.
- 3) Linux including GNU C Library 2.7 or later.

VII. PROPOSED DIAGRAM

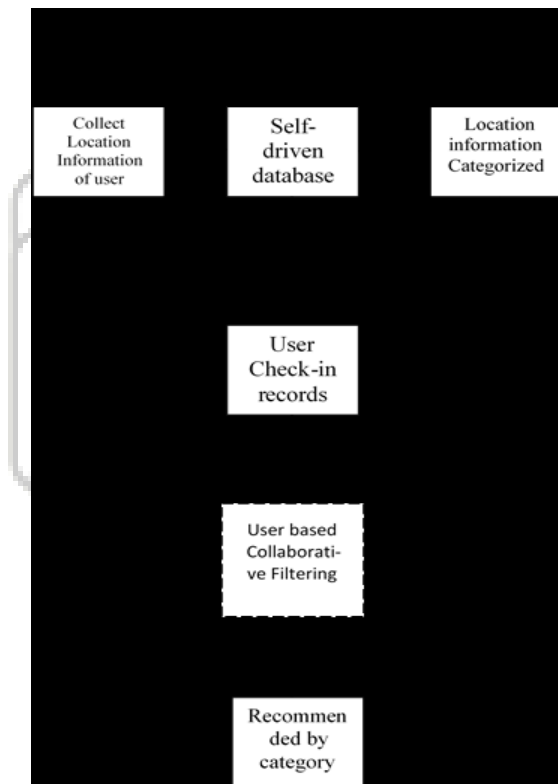


Fig. 1: Place recommender system

Above figure 1 depicts the block diagram of the Place Recommendation System. The recommendation is done by reading the geographic position of the user's mobile device. This information is sent to the database to retrieve spatial information of the local spots. Based on the categories, user's check-in records are analyzed and collaborative filtering algorithm is applied to personalize the places nearby to the end user.

VIII. ALGORITHM

A. To estimate user ratings

For each venue j that user has checked-in record, user rating is estimated by using:

$$Ra(k) = fa(k) * \log \left(\frac{|M|}{|Ma|} \right)$$

Where $Ra(j)$ is the number of check-in times for venue j visited by user a .

$|Ma|$ is the total number of venues visited by user a .
 $|M|$ is the total number of venues.

B. To extract features from self-driven based on user location.

For each category $C \in C$, the category feature $Xa(c)$ is computed by using,

$$Xa(c) = \frac{\sum_{k \in c} Ra(j)}{\sum_{i \in c} Ra(i)}$$

This first step is used to convert the raw frequency of visiting a place with the user to obtain a meaningful weight.

C. User similarity matrix

$$Sim(a,b) = \frac{\sum Xa(c) * Xb(c)}{\sqrt{\sum Xa(c)^2} * \sqrt{\sum Xb(c)^2}}$$

Where $Xa(c)$ indicates the feature value of user a for category c .

Where $Xb(c)$ indicates the feature value of user b for category c .

This is used to find the similar users amongst the different users.

D. Recommendation of the nearby places

$$Score_a(j) = \frac{\sum Rx(k) * Sim(a,x)}{|T|}$$

Where $Rx(j)$ is used to estimate rating of user x in a set of most similar user T for venue k .

$Sim(a, x)$ is the similarity between user a and user x .

IX. CONCLUSIONS

Here , we given the look and implementation of a mobile application known as Intelligent mobile recommender system, with that mobile users will get location guidance information anytime and anyplace. Our system recommends the nearest places for the android users by incorporating the geographic positions. using this application, users will get detailed information. specifically, this application will offer users with location-based information, which might be browsed or queried through a map. This application helps user recommend places of their interest, based on their location.

REFERENCES

- [1] SinghalManav, AnupamShukla. "Implementation of Location Based Services." ICSI International Journal Of Computer Science Issues 9.1:(2012):237-242.
- [2] J.Borras, A.Moreno, A.Valls. "Intelligent Tourist Recommender" Expert Systems With Applications, VOL.41.
- [3] Garcia.E "Cosine Similarity and Team Weight Tutorial." Information retrieval intelligence (2006)
- [4] Sarwar, Mohamed, etal. "An Efficient And Scalable Location-Aware Recommender System."
- [5] N. Shoval, and M. Isaacson, "Tracking tourists in the digital age," Annals of Tourism Research, 34(1), pp. 141-159, 2007.

- [6] Developer: developer. (<http://developer.android.com>)
Johnson, S.: Java in a teacup. Queue, vol. 4,(2006), pp. 36-41
- [7] Damianos Gavalas, Vlasios Kasapakis and Charalampos Konstantopoulos “Scenic Athens: A Personalized Scenic Route Planner for Tourists,” ISCC,1-3, 2016.
- [8] Pirasteh, Parivash, Dosam Hwang, and Jason I. Jung "Exploiting matrix factorization".

