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Vacation Vibes: A Tourist Spots Recommendation System

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Abstract : ***Determining the location of a vacation spot is always a matter of concern for many people. Many tourists have trouble finding the right destinations due to overlaps or limited tourist guides, often caused due to the lack of reachable and organized information. It is not conceivable for one to search individual places that would appeal to their taste. The proposed recommendation system aims to get rid of factors that may cause a stall in vacation planning, often costing time and mental exertion. The system relies on the elaborate use of content-based filtering to fulfill the requirements set by the objective of the project.***

IndexTerms - Tourism, Recommendation Model, Web Application, Content-Based Model, Web scrapping.

I. INTRODUCTION

People, as is natural like to travel and explore to take in all the different vistas and scenery. But when it comes to deciding the location for an outing, it can manifest as a considerably tedious job for some. Visitors can find travel information on blogs, forums, websites interesting points, etc. However, information overflow might prove to be a detrimental factor in the human decision-making process by causing a shortage of focus and many times, loss of scope. During the trip, vacation goers may also need to access information related to unforeseen changes in their journey. Travel recommendation information is important to users, in a commendation success plan one must be able to provide tourism information based on user preferences and place. There is also a growing need for more information on local attractions, such as local food, shopping malls, places of interest, and more during the tour.

The proposed system recommends a wide variety of tourist attractions. Recommendations will be a direct result of the user-defined criteria, they include various tourist spots based on the budget and preference place. This system also specifies the hotels nearby in the budget of the user, which is handled by a separate recommendation model entirely. So whenever, an outing is planned people don't need to spend a decent chunk of time just to decide the location that might adhere to their choice or taste of ambiance and attractiveness. This system makes effective use of content-based filtering, considering characteristic-defining tags that are assigned by the model. It is with the help of this technique that the resultant recommendation is achieved. By considering the different traits, or in other words, the category-defining terms that accurately describe certain places in the dataset. The used dataset was prepared from scratch since no standard dataset which would suffice the objectives were available beforehand.

II. LITERATURE REVIEW

The system proposed by the author Jatin Sharma et. al. [1] tries to explain different filtering mechanisms such as Content-based, Collaborative filtering, and Hybrid filtering as some algorithms like k nearest neighbor, and matrix factorization. They tried to provide detailed information about the above-mentioned techniques in how they work.

Simon Philip et. al. [2] focused on Content-based Filtering and presents an algorithm suggesting recommendations based on the users' query. It employs both TF-IDF weighing and cosine similarity measures.

The core of recommendation systems was elaborated on in this study [3]. The failures and successes of slope-one and min hash algorithms are discussed by the authors. They created a hybrid system that combines the benefits of both algorithms while removing their drawbacks. A new customized basket concept has also been introduced.

The RTT2VEC system was created by Stephen Gua et al. [4] and is a production within-basket grocery recommendation system. It generates real-time, tailored recommendations to enhance the user's current shopping cart. They conduct a detailed offline analysis of our system and find that, compared to baseline contemporary within-basket recommendation systems, our prediction metrics have improved by 9.4%.

Dr. Geetika Munjal et. al. [5] tried to present a generic approach with small changes used to get results in most types of recommender systems. Grocery recommendations are unique to this generic approach because of the possibility of reordering items. This paper focuses on using the idea of reorders to make and compare different systems of online grocery recommendations.

The paper proposed by Yi-Jing Wu et al [6] designed a model using association learning to produce a fresh grocery recommendation system. It considers the past purchases of the customer. It takes into account two extra factors product replenishment and product promotion.

The proposed system [7] has explored numerous deep-learning techniques that enhance the quality of current recommendation systems. They chose collaborative filtering to produce recommendations based on past data. They have used matrix factorization along with collaborative filtering. Deep learning is highly recommended for such problem statements

Pradeep Singh Kumar et. al [8] proposed a study that included various recommendation system approaches, issues in their system, and the techniques used by them used for information retrieval. It considered nearly 1000 research papers across the springer journal from the year 2011 to 2017

The paper [9] informs readers of the fundamentals of recommendation systems. It gives a basic explanation of what recommendation systems are all about. Having read this article, new researchers will be able to recognize the underlying problems with recommender systems that need to be fixed, enabling them to concentrate their research on those problems.

The paper [10] focused on the working of recommendation systems in the IT world. Nowadays we use recommendation systems that automatically recognize users' choices and recommend accordingly. A recommendation system has become one of the major techniques for delivering personalized services.

Yeole Madhavi et. al. [11], proposed a system where the system tried the hybrid approach of the Content-Based Filtering Technique. The system used two algorithms using two different vector conversion techniques to convert text into vectors and then find the similarities between the vectors to get the result. For vector conversion, the system used CountVectorizer and TfidVectorizor. In the end, the system displays the common movies from the output of both algorithms.

Trends in a content-based recommendation by Pasquale Lops and team analyses how the content-based algorithm is used, provided with some form of textual data, in fields like Natural Language Processing. A total of 8 papers were analyzed, all making use of content-based filtering in different aspects. Issues like content-based filtering on non-textual content are also discussed. How in multimedia, this recommendation model relies on recognizable user feedback or inputs [12].

III. RESEARCH METHODOLOGY

The most crucial component for developing any machine learning system is data. The system simply employed several data collection approaches to gathering the information that has been used in the model. When the data was being collected, that was typically raw data. Such raw data cannot be fed to the machine learning model or recommender system. After performing numerous data cleaning procedures, various data pre-processing techniques were applied to prepare the data for feeding our model, such as deleting stop words and creating vectors of each word so that it gets evaluated mathematically. Also, the system used different Natural Language Processing (NLP) approaches to transform the text-based collected data into a usable manner. To determine the degree of similarity between the two words, the system employed mathematical techniques like cosine similarity as well as some Natural Language Processing (NLP) techniques, such as the Count vectorizer.

The proposed system recommends tourism destinations to the user. The system consists of two distinct recommendation models based on various algorithms to see which algorithm would produce the best results in our situation. The first algorithm used is called a "Content-based Recommendation System," and the second one is called a "Collaborative Filtering-based System." A hybrid Recommendation System is an additional recommendation system that is available. A hybrid recommendation system combines both Content-based and Collaboration-based approaches. But the proposed system has implemented a content-based recommendation system.

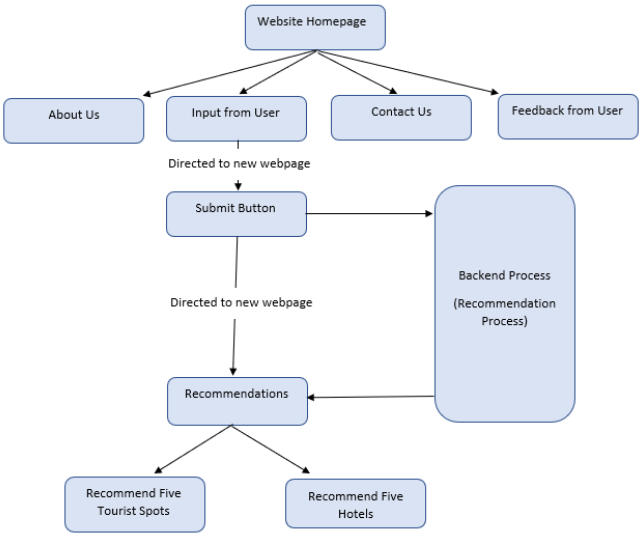

Fig. 1 Flow of the Whole System

In a content-based recommendation system, the system makes recommendations based on user history. For instance, if a user wants to take beach vacations, the model will suggest some suitable beaches to visit based on data collected from the user. A new column called tags has been added to the data set to construct the content-based recommendation system. The "tag column is being created using the NLP approach i.e. CountVectorizor. The information which will be used to make recommendations were concatenated in this column. Each word in a "tag" column was converted into a separate vector. When the user provides some input to the system, the model uses the cosine similarity function to determine how similar the input word was to the terms in the tags column. The tourist destination will be recommended based on the similarity score provided by the cosine similarity model.

IV. RESULTS AND DISCUSSION

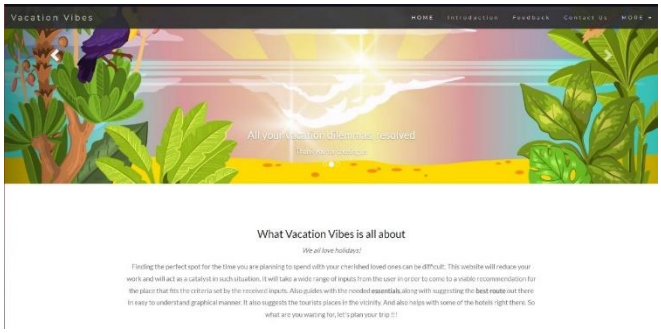

Fig. 2 UI of the System

Fig. 2 shows the Home page of the website which would allow users to input their preferences for their ideal vacation. The website would then use these preferences to generate a list of recommended vacation spots. It also features the area where we simply

briefly discussed our website. Additionally, there is a Feedback form and a Contact Us section where users can ask inquiries.

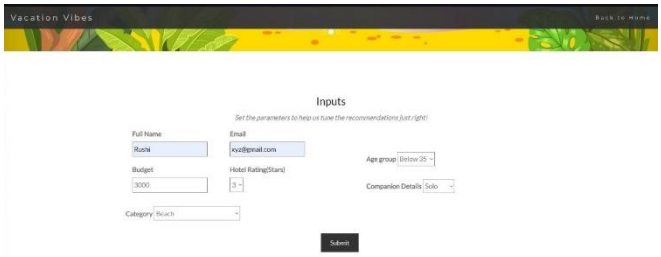

Fig. 3 Input Page

Fig. 3 depicts the system's input screen, where the system gets a clear idea of what kind of vacation the user wants. It has some basic input sections like travel budgets, hotel preferences, and geographical categories. It also includes personal information about the user to get more effective results.

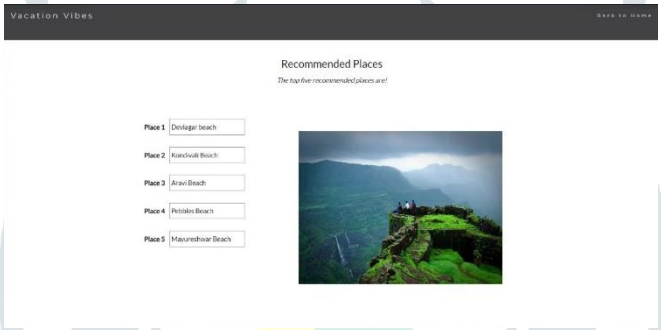

Fig. 4. Display Recommended Tourist Spots

As per the inputs by the user, the recommended tourist spots are shown in Fig. 4. The algorithm makes recommendations for selecting locations based on the input received and content-based filtering. The model uses the dataset to identify nearby locations based on inputs like the place category and the budget.

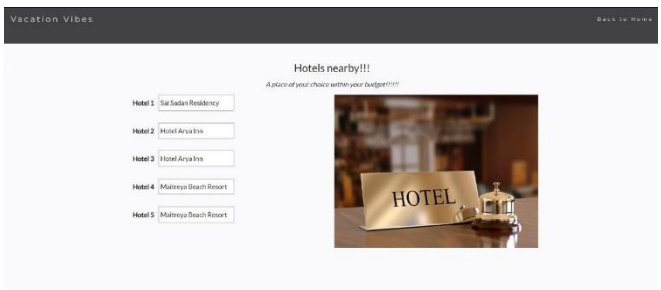

Fig. 5 Display Recommended Hotels

The recommended hotels are shown in Fig. 5. The algorithm proposes hotels in the area based on input and content-based filtering. The system uses data from the dataset to propose nearby hotels based on inputs like budget and favorite hotel ratings.

V. CONCLUSION

The proposed system helps in minimizing the dilemma or hindrances in the human decision-making process that may be present when one is trying to zero in on a viable vacation spot. Ease of use is maintained by keeping the required inputs from the user quick and not difficult to come up with when prompted to do so. This also helped in streamlining the way the model would come up with the output. Recommendations are a result of a custom dataset that was prepared by scraping Google Maps (using readily available browser tools) and a content-based model that was trained on it. Users are not only provided with the top 5 places but also hotels that are close to the respective recommended spots. Two separate content-based models were used to recommend resultant destinations and hotels corresponding to them.

REFERENCES

[1] Jatin Sharma, Kartikay Sharma, Kaustubh Garg, Avinash Kumar Sharma, "Product Recommendation on System a Comprehensive Review", Materials Science and Engineering, 2021.

[2] Simon Philip, P. B. Shola, Abari Ovye John, "Application of Content-Based Approach in Research Paper Recommendation System for a Digital Library", International Journal for Scientific Research & Development, 2014.

[3] Prof. Suja Panikar, Prayag Mane, Chetan Pakhale, Shubham Fulzele, Akshay Rathi, "Online Grocery Recommendation on System", International Journal for Scientific Research & Development, 2016.

[4] Dr. Geetika Munjal, Lamiyah Kattar, "Analysis of Online Grocery Recommendation Systems", IEEE, 2021.

[5] Stephen Guo, Yokila Arora, Aditya Mantha, "A Large-Scale Deep Architecture for Personalized Grocery Basket Recommendations", IEEE, 2020.

[6] Yi-Jing Wu, Wei-Guang Teng, "An Enhanced Recommendation Scheme for Online Grocery Shopping", IEEE, 2011.

[7] Snehal R. Chavare, Chetan J. Awati, Dr. Suresh K. Shirgave, "Smart Recommender System Using Deep Learning", International Conference on Inventive Computation Technologies, 2021.

[8] Pradeep Kumar Singh, Piyush Kanti Dutta Pramanik, Avick Kumar Dey and Prasenjit Choudhary, "Recommender System: An Overview, Research Trends and Future Directions", International Journal of Business and Systems Research, 2021.

[9] Nitin Mishra, Saumya Chaturvedi, Aanchal Vij, Sunita Tripathi, "Research Paper on Recommendation on System", RASCC, 2020.

[10] Dr. Alka Singhal, Shivangi Rastogi, Nikhil Panchal, Shivani Chauhan, Shradha Varshney. "Research Paper on Recommendation System", GSJ, Vol. 9, Issue 8, August 2021.

[11] Yeole Madhavi, Rokade Monika, Khatal Sunil, "Movie Recommendation System using Content-Based Filtering", IJARIIE, Vol. 7, Issue 4, 2021.

[12] Pasquale Lops, Dietmar Jannach, Cataldo Musto, Toine Bogers, Maijn Koolen, "Trends in content-based recommendation".

[13] Avinash Bamane, Parikshit Bhoyar, Ashish Dugar & Lineesh Antony, "Enhanced Chat Application", Global Journal of Computer Science and Technology Network", Web & Security, Volume 12 Issue 11 Version 1.0 June 2012

[14] Prof Sachin Walunj, Yashwant Bhaidkar, Pranav Bhagwat, Priyanka Bhalere, Radhika Gujar, "Tourist Place Recommendation system", IJARIIE, Vol-2 Issue-3 2016.

[15] Pravinkumar Swamy, Sandeep Tiwari, Kunal Pawar, Prof. Bharati Gondhalekar," Tourist Place Recommendation System", International Journal of Engineering Research & Technology (IJERT),2021

[16] Roopesh L*, Tulasi. B," A Survey of Travel Recommender System", International Journal of Computer Sciences and Engineering, Vol 6 Sep 2018

[17] Hend Alrasheed, Arwa Alrasheed, Nora Shameri, "A Multi-level Tourism detection Recommender system", Science Direct,2020

[18] Hamzah Alghamdi, Shiai Zhu and Abdulmotaleb El Saddik," E-Tourism: Mobile Dynamic Trip Planner", IEEE, 2016

[19] Prof. P. A. Manjari, Miss P. V. Ninawe, Miss M. L. Dabhire, "Recommendation System Based on Tourist Attraction", International Research Journal of Engineering and Technology, 2016.