



Tour Guidance System Using Android Studio

Riyansh Sachan, Harsh Vardhan Som, Harsh Kumar

Department of Computer Science & Engineering, Inderprashtha Engineering college (030), Ghaziabad affiliated to AKTU Lucknow, India
riyanshsachan1@gmail.com¹, harsh2033d@gmail.com², harsh9810kumar@gmail.com³

ABSTRACT—

With the help of the Tour Guidance System, travellers may have a more enjoyable trip by receiving individualised advice and support. This system provides users with personalized suggestions, real-time information, and navigation help by utilizing contemporary technology such as GPS, mobile applications, and artificial intelligence. Essentially, the Tour Guidance System tracks the user's location and movement in real-time with accuracy thanks to GPS technology. Users may access a multitude of features and services, such as interactive maps, areas of interest, historical landmarks, and suggested routes, by connecting with a mobile application. Personalized recommendations based on user choices, hobbies, and demographics are one of the main features of the Tour Guidance System. By utilizing machine learning algorithms and data analysis, the system may recommend lodgings, restaurants, activities, and destinations based on the user's interests, guaranteeing a personalized and delightful vacation experience. In addition, the Tour Guidance System provides customers with navigation help, directing them along the best paths to their intended locations. To improve ease and efficiency when traveling, users may get turn-by-turn instructions, traffic updates, and alternate routes to avoid jams or delays. Additionally, the Tour Guidance System serves as a valuable source of real-time information, providing users with updates on local events, weather conditions, transportation schedules, and safety advisories. This ensures that users stay informed and prepared throughout their journey, contributing to a seamless and stress-free travel experience.

Keywords—personalized recommendation, web deployment, machine learning, template, Scriber, IEEE, format

1. INTRODUCTION

Whether for work, pleasure, or discovery, travel has become an essential part of our lives in the fast-paced world of today. However, tourists frequently find it difficult and confusing to navigate unknown locations and make wise choices regarding activities, attractions, and logistics. The Tour direction System is a ground-breaking solution that uses technology to give consumers real-time information, individualized direction, and assistance with navigation in order to address these problems and improve the trip experience. The Tour Guidance System is a fundamental shift in how travelers discover and move through unfamiliar places. With the use of contemporary technology, like as GPS, smartphone apps, and artificial intelligence, this system seeks to provide travelers with the knowledge and resources necessary to make wise choices and get the most out of their travels.

Fundamentally, the Tour Guidance System is made to provide users with personalized advice and support according to their likes, interests, and demographics. The system may make recommendations for places to visit, things to do, dining options, and lodging based on sophisticated algorithms and data analysis. This guarantees that the user will have a personalized and unforgettable travel experience.

Additionally, the Tour Guidance System helps customers with navigation by pointing them in the best directions to their goals. Users may rely on the system to provide turn-by-turn instructions, traffic updates, and alternate routes to avoid congestion or delays, boosting ease and efficiency throughout travel, whether they are visiting a busy metropolis, picturesque countryside, or historical locations.

2. ABOUT TOUR GUIDANCE

Through a smartphone application, the Tour guiding System offers a tailored and comprehensive guiding experience that transforms the way tourists discover new places. Travelers want for quick and engaging methods to explore new places, negotiate challenging terrain, and maximize their trips in today's hectic environment. By utilizing state-of-the-art technology, our application meets these objectives by providing users with real-time support, personalized recommendations, and smooth navigation, enabling them to have meaningful and unforgettable travel experiences.

The Tour Guidance System harnesses a variety of advanced technologies to deliver its innovative features and functionalities: Global Positioning System (GPS), Flutter, Dart, JavaScript, CSS. It describes how HTML elements should be displayed.

Features for Safety: The app has safety features such as warnings in real time about possible threats, emergency services, and evacuation routes. In order to ensure their safety and peace of mind when traveling, users may rely on the Tour Guidance System to deliver fast information and support in case of crises.

The Tour Guidance System transforms the travel experience by utilizing these cutting-edge technologies, providing users with a smooth fusion of convenience, personalization, and discovery as they set off on their global explorations.

i. USER REGISTRATION

Flutter and Dart is used for the creation of the login and signup page, Login and signup page is just a quick taking information for the feature records data, it's only for one-time data collection system and once when you have register then can't give similar data same again. The Tour Guidance System sign-in page is the entry point for users to access the tailored features and material of the program.



Fig 1: SIGNUP Page

ii. HOME PAGE

The Tour Guidance System homepage is the main location from which people start their investigation. It has a friendly, user-friendly interface that is intended to give consumers fast access to key functions, tailored suggestions, and pertinent data. An explanation of the main elements and features of the home page is provided below: Navigation Menu, Search Bar, Featured Destinations, Weather Forecast, Travel Tips and Guides, etc.



Fig 1: Home Page

Using the above said technologies, we have made a web portal. Under we have attached a picture which gives you all an idea about how it would look.

iii. FEATURES OFFERD

A number of elements are available through the Tour Guidance System that are intended to improve travellers' experiences and give them all-encompassing assistance when traveling. The following are some of the system's primary features:

- Personalized Recommendations
- Interactive Maps and Navigation
- Trip Planning and Itinerary Management
- Real-time Weather Updates
- Safety and Emergency Assistance
- Booking and Reservation
- News Updates



Fig 2: Features Pag0065

iv. HOTEL BOOKING PAGE

The Tour Guidance System's hotel booking tool is intended to make it easier for visitors to locate, evaluate, and reserve lodging. An explanation of this feature's operation and its main parts is provided below:

- Search and Discovery
- Filtering and Sorting
- Real-time Availability and Pricing
- Secure Payment Processing
- Booking Confirmation

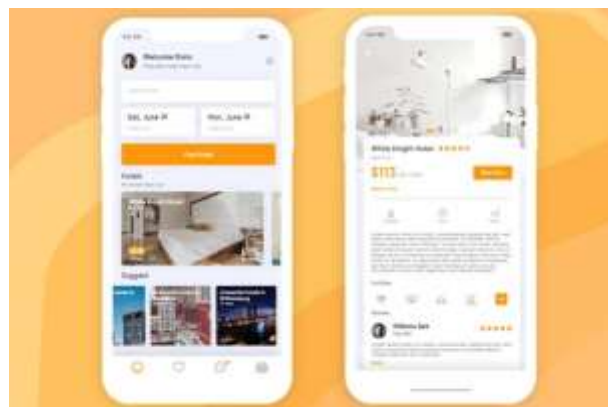


Fig 3: Booking page

v. CONTACT PAGE

The next page will be the contact us page. It consists of a navbar, contact-us form, details about the institute and a footer. The page consists of a contact us form for any technical issues. Underneath we have attached a picture which gives you all an idea about how it would look.



Fig4: Contact page

3. TECHNOLOGY

Flutter- Google developed an open-source UI software development kit called Flutter. Using a single codebase, it is used to create natively built apps for desktop, web, and mobile (iOS and Android).

Dart is an open-source, general-purpose programming language developed by Google. It is optimized for client-side development, enabling developers to build web, mobile, and desktop applications with ease.

Machine Learning is at the core of the project. It is being extensively used to help predict and recommend suitable career choices to the user at the portal. Our project is basically a recommendation system, and various machine learning algorithms can be used to build recommendation systems, depending on the output requirement.

In the case of the Career Guidance System, this doesn't work. Thus, we turn towards Collaborative Filtering.

Collaborative Filtering further is of two types: User-User Based Filtering and Item-Item Based Filtering.

User Collaborative Filtering first finds the similarity score between users. Based on this similarity score, it then picks out the most similar users and recommends products which these similar users have liked or bought previously. Item-Item Collaborative Filtering finds similarity between each pair of items, and then recommends items liked in the past.

While the data was being collected, we tested various machine learning algorithms on Movie Recommendation Dataset. Support Vector Machine (SVM) gave an accuracy of 0.68, while Naive Bayes algorithm gave an accuracy of 0.75. We have decided to use Naive Bayes, K-Nearest Neighbor and Random Forest Classification Algorithms. For collecting the dataset, we needed to decide which models to use for gauging the personality of the person, for which we researched the following models.

Holland Codes: Holland Codes are one of the most popular models used for career tests today. Holland argued that the choice of a vocation is an expression of personality. There are six personality types in Holland's model and most people will fit into a few of the categories:

The Big Five: The Big Five come from the statistical study of responses to personality items. Using a technique called factor analysis researchers can look at the responses of people to hundreds of personality items and ask the question "what is the best way to summarize an individual?"

MBTI: The underlying assumption of the MBTI is that we all have specific preferences in the way we construe our experiences, and these preferences underlie our interests, needs, values, and motivation. The MBTI sorts psychological differences of people into four opposite pairs, or "dichotomies", with a resulting 16 possible psychological types.

We needed to implement the Personality Test in us google form so as to gather data. In Big 5 Personality Test, the personality of the person is calculated using a set of 5 mathematical formulae which is much easier to implement using excel sheets as compared to Holland Code and MBTI. Thus, we selected the Big 5 Personality Test, for both testing the user as well as for collecting our data.

4. RESULT

The Tour Guidance System is intended to provide passengers with a number of advantages and results, improving their pleasure and overall travel experience. The following are some possible outcomes and effects of putting this system in place:

Travel planning and exploration become more easy, pleasurable, and rewarding with the system's tailored recommendations, real-time navigation, and access to useful travel resources. Travelers may have more meaningful and pleasant travel experiences when they make well-informed selections regarding locations, attractions, activities, and lodgings thanks to the system's tailored suggestions, user ratings, and access to pertinent information.

5. CONCLUSIONS

Tour Guidance System is a revolutionary tool that offers a full range of features and functions to improve all facets of the trip experience for users, hence reinventing the traveler experience. Through the use of state-of-the-art technology, customized suggestions, and seamless integration with necessary travel services, the system enables travelers to confidently and conveniently explore new places, make educated decisions, and create unforgettable experiences.

ML ALGORITHM	ACCURACY
Linear Regression	0.81
K-Nearest Neighbor	0.83
Random Forest Classifier	0.87

Table 1: Machine Learning Algorithm performance

ACKNOWLEDGMENT

We take this opportunity to thank our teachers and friends who helped us throughout the project.

First and for most I would like to thank my guide for the project **Ms. Chandra Pushpanjali (Assistance Professor, Computer Science Department)** for her valuable advice and time during development of project

We would also like to thank **Dr. Vijai Singh (HoD, Computer Science Department)**

for his constant support during the development of the project.

REFERENCE

- [1] Fulmore, Julia A., Jude Olson, and Rosemary Maellaro. "Aligning Leadership Education: Linking Interpersonal Skills Development to Business Needs." *Journal of Management Education* 47.3 (2023): 263-291.
- [2] Braskamp LA, Trautvetter LC, Ward K (2006) Putting students first: how colleges develop students purposefully. Anker, Bolton.
- [3] Burch GF, Giambatista R, Batchelor JH, Burch JJ, Hoover JD, Heller NA (2019) A meta-analysis of the relationship between experiential learning and learning outcomes. *Decis Sci J Innov Educ* 17:239–273
- [4] Chapman S, McPhee P, Proudman B (1992) What is experiential education? *J Exp Educ* 15:16–23
- [5] Kazi Fakir Mohammed and Sushopti Gawade and Vinit Nimkar "Proceeding International conference on Recent Innovations in Signal Processing and Embedded Systems (RISE - 2017) 27-29 October, 2017"
- [6] Crow, L. D. & Crow, A. (1951). *An Introduction of Guidance Principles and Practices*. New York: American Book Company.
- [7] Ghosh, S.K. (2014). *Sikshay Sangati Apasangati O Nirdesana*. Kolkata: Classic Book.
- [8] Zunker, V.G. (2002). *Career Counselling: Applied Concepts of Life Planning*. (6th edition). New York: Wadsworth Group.
- [9] Walter, S. M. (2012). *Educational Guidance in High Schools*. Urbana: The University of Illinois.
- [10] Kochhar, S. K. (1980). *Guidance and Counselling*. New Delhi: Sterling Publish.