

MINI PROJECT REPORT  
ON

**“Personalized Tourism Recommender”**

SUBMITTED IN PARTIAL FULFILLMENT OF THE  
REQUIREMENT FOR THE DEGREE OF  
**THIRD YEAR COMPUTER ENGINEERING**

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AIROLI, NAVI MUMBAI - 400 708

(A. Y. 2021-22)



**DATTA MEGHE COLLEGE OF ENGINEERING**  
**AIROLI, NAVI MUMBAI**

## **CERTIFICATE**

This is to certify that the project entitled  
**“Personalized Tourism Recommender”**  
is bonafide work of  
**“Mule Rishi - B64, Kadam Shrutika - B59, Mulik Shubham - A31”**  
submitted to the University of Mumbai in partial fulfillment of the requirement  
for the award of the degree of  
**“Undergraduate” in “Computer Engineering”.**

Prof. P. S. Rahate

Project Guide

Dr. A. P. Pande

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Dr. S. D. Sawarkar

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**DATTA MEGHE COLLEGE OF ENGINEERING**  
**AIROLI, NAVI MUMBAI**

**MINI PROJECT APPROVAL**

This mini project entitled **“Personalized Tourism Recommender”**  
by **“Mule Rishi-B64, Kadam Shrutika-B59, Mulik Shubham-A31”**  
is approved for  
the degree of **“Undergraduate”** in **“Computer Engineering”**.

Internal Examiner

Date:

Place:

External Examiner

Date:

Place:

## **DECLARATION**

We declare that this written submission represents our ideas in our own words and where others' ideas or words have been included; we have adequately cited and referenced the original sources. We also declare that we have adhered to all principles of academic honesty and integrity and have not misrepresented or fabricated or falsified any idea/data/fact/source in our submission. We understand that any violation of the above will be cause for disciplinary action by the Institute and can also evoke penal action from the sources which have thus not been properly cited or from whom proper permission has not been taken when needed.

**Name of the Students**

**Signature**

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## **ABSTRACT**

This project focuses on building a personalized recommender system in the tourism field. The application interacts with the user in the beginning through a chatbot which is a web-based tool to simulate text-based interactions between user and the computers. The application is capable of analyzing the interaction between the user and the system, and offering them personalized recommendations. In today's world many people rely on online services. They even plan for trips by searching places online. However, they usually face problems of being supplied with lots of information. In consequence, they end up wasting a great amount of time in searching and decision making. In order to save time and improve the tourist experience, the recommender system recommends to a tourist the most attractive places across the globe according to their preferences. The application also allows the user to book hotels. The application also recommends the attractions in that particular place. Travel and Tourism domain is one of the most important economic areas of a nation and recommender systems in this domain would cater to not only the tourists but also to the governments.

Getting the expert advice to specify a reliable tourist attraction quickly and consistent to the requirements of each tourist was difficult, and the amount of experienced experts who can advise for tourism issues was insufficient. Providing an effective service in the tourism sector, such as using the technology of computer systems, can be the right solution and very necessary to attract foreign and local tourists to visit the tourist attractions in the country.

## **ACKNOWLEDGEMENT**

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Rishi Mule

Shubham Mulik

Shrutika Kadam

Place:

Date:

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# INTRODUCTION

## 1.1 Introduction:

Tourism is one of numerous commercial enterprises that has profited massively from utilizing the site as a part of the web. The growth rate in online tourism has quickly increased. This is because it makes it easier for travelers to travel anywhere with information with details about the places.

Traditionally, travelers used to rely on travel magazines, personal travel blogs, or a combination of online resources and services such as travel guide, map services and human intelligence to piece together an itinerary. This is because the traveler generally doesn't have any prior knowledge and they may face the problem of difficulty and time consuming in travel planning, especially first-time travelers.

So, to provide that information, our web-based recommendation system proposes the places of interest for the travelers. It is based on a rule-based Tourism Recommender System. The main function of this system is to recommend the places based on the input from the user. Users will also be able to book hotels via our system.

In the tourism sector, new technologies based on the Internet currently play a very important role, as they can supply more complex and complete products that meet users' demands. But before presenting any suggestion to the user (hotels to stay, places to visit, cultural or leisure activities to perform, etc.), the system will have to explore several sources of information. In order to manage and organize the available information of the growing and decentralized database that the Internet has become, it is essential to face up to the challenge of locating, processing and integrating all the relevant and available information.

The tourism industry has become a potential sector to leverage economic growth. Many attractions are detected on several platforms. Machine learning and data mining are some potential technologies to improve the service of tourism by providing recommendations for a specific attraction for tourists according to their inputs of location and profile.

Digital tourism is a part of digital transformation in the tourism industry that uses digital technology as a strategic platform for transformation from the traditional approach to

digital. The digital platform offers a better solution for tourism rather than the traditional approach through a more effective and efficient service for stakeholders in tourism.

Chatbot interacts with the user and finds their interests. Chatbot is a simple computer program that attempts to simulate human conversation using Artificial Intelligence. It uses AI to simulate conversation with user through messaging chats or voice commands. These bots are used in many service areas as an information provider in online mode.

Natural Language Processing made the Chatbots more sophisticated by means of not only pre-programmed responses to user questions but also improving their responsiveness.

The world is moving towards the automation of human effort with the help of machine learning, artificial intelligence and robotics. While there is a huge scope of improvement, some of the key areas that can be targeted for automation are the responder system in various fields.

An artificial intelligence based bot can replace human efforts without compromising on the quality of response.

## **1.2 Motivation:**

It is the 21st Century, the world of computers and the world of automation. Though this is the case some parts of the world still cling on to the old ways even though they might be time consuming, just because of habit, planning a tour being one of them.

Our motivation for developing the Personalized Tourism Recommender System was to use our technical knowledge of the Engineering field and devise a new system that may help with easing the task and contribute to the sustainable growth and development of tourism industries.

So, we decided to build a project from scratch that will help in giving personalized recommendations to the user from any part of the globe for a better planning of their tour.

### 1.3 Problem Statement and Challenges:

The tourism industry sector has become a potential sector for economic growth in various regions. Tourism industries have faced a hard challenge since the coronavirus disease 2019 (COVID-19) pandemic.

As the tourism industry gets an opportunity to rebound, it is necessary to prepare adequate strategies and activities to be able to provide good service for every tourist and all stakeholders.

Personalized Tourism Recommendation System assists users on the organization of a leisure and tourist agenda by interacting with them and finding their interests.

Artificial intelligence chatbot technology makes interactions between man and machines using natural language possible.

A chatbot can give different responses from the same input given by the user. A chatbot is a conventional agent that is capable of communicating with operators by using natural languages. As numerous chatbot platforms already exist, there are still some problems in building data-driven system because a huge amount of data is required for their development

The major modules of the project include:

- i. Data collection through web scraping, cleaning and integration
- ii. Hotel recommendation based on user's requirements
- iii. Attraction recommendation for Morning and Evening using categories of tours
- iv. Integration of all the above-mentioned recommendations in-order to provide a one-stop travel plan for each day of travel.

Major challenges in implementing the above modules were as follows:

- i. **Dataset:** The data required to provide the recommendations mentioned above was not available readily. Web scraping techniques were used to crawl through several attractions, hotels and their respective reviews on each item from relevant websites.

- ii. **Categories of Recommendation:** Using different models for providing recommendations for Hotels, Attractions and Restaurants required different methods for data collection, pre-processing and cleaning, different techniques for user profiling and hence, thrice the work.
- iii. Evaluating and improving the performance of the models to obtain relevant recommendations.
- iv. Integration of all the recommendations to get an efficient travel plan was a challenge. (v) Scalability of the recommendations provided.

## **1.4 Objectives:**

- The main objective of this system is to give better personalized recommendations of tourism places to users for better decision making.
- To design a user-friendly system with easy to understand interfaces.
- To pass a query on the dataset to extract the required output based on the user's inputs.
- To recommend real time map-based places using APIs.
- User will select a particular place to view its details.
- To provide suggestions to the tourists to identify the most suited transport (flight, train, etc.) accommodations, museums, special interest places and other items which are required for the trip.
- It keeps a track on climate conditions for a better customer experience.
- It also keeps track of environmental factors.

# LITERATURE SURVEY

## 2.1 Survey of Existing System:

In previous system Tourism websites, we can observe that only some of the existing systems provide services that go beyond a pure booking system's functionality. Tourists can find tourism information on blogs, forums, websites of points of interest etc. However, information overflow can occur on the internet as there is still a lack of focus on the use of recommended technology in the tourism field. During a trip, tourists need to be able to obtain tour information in a timely manner whenever there are any changes in their planned trip.

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, 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.

Recommendation of tour information is vital for users, for the recommendation system to succeed; it must be able to provide tourism information based on the user's preferences and current location. There is also increasing demand for more information on local area attractions, such as local food, shopping spots, places of interest and so on during the tour. The goal of this system is to propose a suitable recommendation method for use in a Recommendation System Based on Tourist Attraction to provide personalized tourism information to its users.



## **2.2 Limitation of Existing System or research gap:**

In the previous system there were many works which were manually done by tourists and they did not get the proper information. Tourists visited the various links but they did not get their destination. Also, about the environment or weather, transportation tools, civilization. Previous system did not recommend to the tourist which attractions are better to attend, and identify which information about attractions is better to be shown to the tourist. And also, a recommendation system not used which helps to choose an Internet source that provides a description of the interested attraction based on other tourist's ratings.

Some of the challenges faced by existing tourism systems are:

- Lack of data
- Data duplication
- Changing data
- Transportation barriers
- Maintaining own service standard
- Complexities in service requirements
- Travel planning information
- Changing User preferences

# PROPOSED SYSTEM

## 3.1 Introduction:

### Architecture/ Framework:

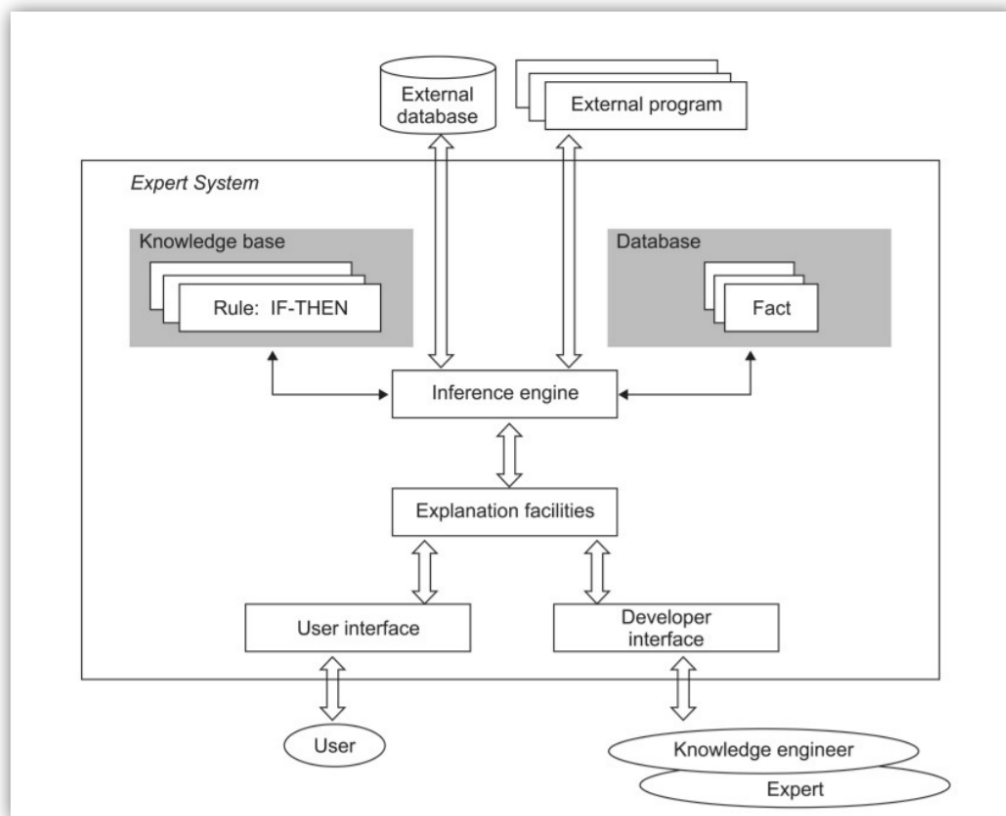
#### ❖ Rule Based System:

A rule-based system is a system that applies human-made rules to store, sort and manipulate data. In doing so, it mimics human intelligence.

To work, rule-based systems require a set of facts or source of data, and a set of rules for manipulating that data. These rules are sometimes referred to as 'If statements' as they tend to follow the line of 'IF X happens THEN do Y'.

Automation software like Think Automation is a good example. It automates processes by breaking them down into steps.

- First comes the data or new business event
- Then comes the analysis: the part where the system conditionally processes the data against its rules
- Then comes any subsequent automated follow-up actions



**Figure: Basic Structure of rule based expert system**

Rule-based systems, unsurprisingly, work based on rules. These rules outline triggers and the actions that should follow (or are triggered). For example, a trigger might be an email containing the word “invoice”.

An action might then be to forward the email to the finance team. These rules most often take the form of if statements. ‘IF’ outlines the trigger, ‘THEN’ specifies the action to complete. So, if you want to create a rule based system capable of handling 100 different actions, you’d have to write 100 different rules. If you want to then update the system and add actions, then you would need to write new rules.

In short, you use rules to tell a machine what to do, and the machine will do exactly as you tell it. From there, rule-based systems will execute the actions until you tell it to stop.

But remember: if you tell it to do something incorrectly, it will do it incorrectly.

#### ❖ **Pattern Matching:**

Pattern matching is the act of checking a given sequence of tokens for the presence of the constituents of some pattern. In contrast to pattern recognition, the match usually has to be exact. The patterns generally have the form of either sequences or tree structures. Uses of pattern matching include outputting the locations of a pattern within a token sequence. In this the project develops a methodology to find a suitable pattern to the user by filtering the information according to their pattern of profile and by tracking the frequent search of the user.

#### ❖ **Recommendation based on scaled weighted average and popularity score:**

A recommender system, or a recommendation system, is a subclass of information filtering system that seeks to predict the “rating” or “preference” a user would give to an item. More formally, the recommender problem can be interpreted as determining the mapping  $(c, i) \rightarrow R$  where  $c$  denotes a user,  $i$  denotes an item, and  $R$  is the utility of the user being recommended with the item. Items are then sorted by utility and top  $N$  items are presented to user as recommendation.

$$WeightedRating(WR) = \left( \frac{v}{v+m} \cdot R \right) + \left( \frac{m}{v+m} \cdot C \right)$$

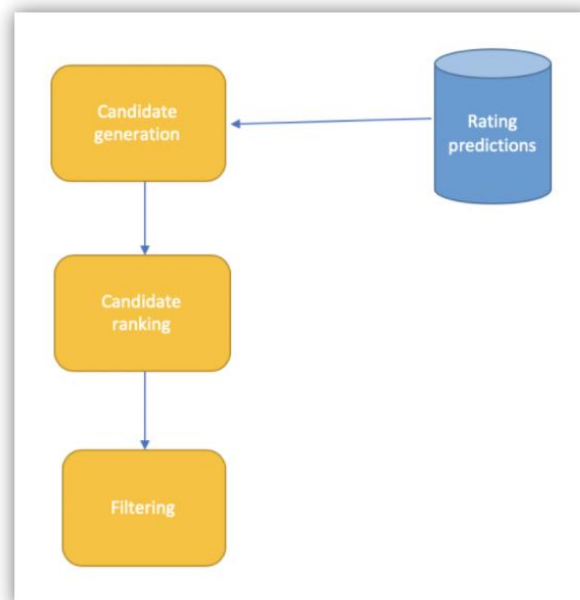
Number of voters (points to  $v$ )

The average rating of the article (points to  $R$ )

The minimal number of votes to get into the list (points to  $m$ )

The average vote on the entire matrix (points to  $C$ )

Ranking algorithms rely on search query provided by users, who know what they are looking for. Recommender systems, on the other hand, without any explicit inputs from users, aim to discovering things they might not have found otherwise.



**Fig : Ranking based recommender**

Recommender systems put more emphasize on personalization, and hence, are more exposed to data sparsity. Many recommender systems researches tend to focus on predicting the ratings good or bad that a user give to the items they haven't seen yet. However, that's different than what a recommender system needs to do in real world. Usually people don't care about how you predict their rates on new items. The ratings recommender systems provide is the aggregate rate of the ratings they previous users have given not the prediction of your rate.

## Working of Recommendation System:



**Figure: Working of recommendation system**

In the above figure, the working of our study is defined such that it includes the steps of the registration/login process of the user which is required to recommend the place according to user profile. The user also can find the places according to city wise, and the ranking of those tourist places. Also, the system gives the nearest attractions suggestions that can also help to re-rank from the user experience. Search history is saved in the database for future suggestions. All this information is provided with all the details of places and attractions around it.

So, there are some algorithms by which users get their recommended place. By using these algorithms, a better recommendation can be given to the users.

### ❖ **Natural Language Processing:**

NLP is of particular importance for chatbots because this technique determines how the bot will understand and interpret the text input. The goal of an ideal chatbot would be to converse with the user in such a way that the user is completely unaware that they are talking with a machine.

NLP is a way for computers to analyze, understand, and derive meaning from human language in a smart and useful way.

NLP combines computational linguistics rule-based modeling of human language with statistical, machine learning, and deep learning models. Together, these technologies enable computers to process human language in the form of text or voice data and to ‘understand’ its full meaning, complete with the speaker or writer’s intent and sentiment.

## **3.2 Methodology**

### **3.2.1. Data Collection**

The real-life data that includes structured data such as Place name, City where it is located, rating of users, and unstructured data such as review of users. The data set excludes the users personal details such as name, ID, and location so as to preserve their privacy.

### **3.2.2. Pre-processing**

The collected data are pre-processed for the availability of missing values in most of the structured data. Hence, it is essential to fill out the missed data or remove or modify them to enhance the quality of the data set. The pre-processing step also eliminates the commas, punctuations, and white spaces.

### **3.2.3. Model Description:**

As described above the recommendations are the results of a rule based ranking and recommendation system. Using various APIs we generate addition parameters to our data such as Geographic coordinates: Latitude, Longitude, Availability of Medical facilities, Temperature, Humidity, AQI score.

### **3.2.4. Places Recommendations**

Based on users parameters (which may include distance, no of days, age of travelers inclusion of infants and senior citizens) and the rules of the Rule based system system, data is manipulated and weighted scores are generated using the weighted score rating function, which are then used to rank the place and the ones with the top score are recommended to users.

#### **❖ Technologies and Libraries used:**

- **GeoPy:**

Geopy is a Python 2 and 3 client for several popular geocoding web services. Geopy makes it easy for Python developers to locate the coordinates of addresses, cities, countries, and landmarks across the globe using third-party geocoders and other data sources. Geopy includes geocoder classes for the OpenStreetMap Nominatim, Google Geocoding API (V3), and many other geocoding services.

Geopy can calculate the distance between different points, it can also make an API call on our behalf to get information about these coordinates.

- **OpenCage:**

Geocoding is the process of converting place names or addresses into geographic coordinates – like latitude and longitude – or vice versa. With {opencage} you can geocode using the OpenCage API, either from place name to longitude and latitude (forward geocoding) or from longitude and latitude to the name and address of a location (reverse geocoding)

OpenCage Geocoder is simple, easy, and open geocoding for the entire world. This API combines multiple geocoding systems in the background. Each is optimized for different parts of the world and types of requests. Each is optimized for different parts of the world and types of requests. Using Geocoder we can retrieve OpenCage's geocoded data from OpenCage Geocoding Services.

- **Foursquare:**

The Foursquare API is a RESTful API based on HTTP requests and JSON responses. This version of the API , version2 , uses OAuth 2.0 . This means that all requests will need to be encrypted and sent via HTTPS.

Foursquare API provides a range of tools for developers to incorporate the up-to-date location data to enhance their projects.

- **OpenWeatherMap:**

OpenWeatherMap is an online service, owned by OpenWeather Ltd, that provides global weather data via API, including current weather data, forecasts, nowcasts and historical weather data for any geographical location.

The company provides a minute-by-minute hyperlocal precipitation forecast for any location. The convolutional machine learning model is used to utilize meteorological broadcast services and data from airport weather stations, on ground radar stations, weather satellites, remote sensing satellites, METAR and automated weather stations.

The variety of weather APIs provided by OpenWeatherMap have found a significant popularity among the software developers, which resulted in the growing multitude of



repositories on GitHub. The APIs support multiple languages, units of measurement and industry standard data formats like JSON and XML.

- **Pandas:**

Pandas is an open source Python package that is most widely used for data science/data analysis and machine learning tasks. It is built on top of another package named Numpy, which provides support for multi-dimensional arrays.

Pandas is a python package that provides fast , flexible , and expressive data structures designed to make working with “relational” or “labeled” data both easy and intuitive. It aims to be the fundamental high-level building block for doing practical , real world data analysis in Python. Additionally, it has the broader goal of becoming the most powerful and flexible open source data analysis / manipulation tool available in any language.

- **Dialogflow:**

Dialog Flow is a natural language understanding platform used to design and integrate a conversational user interface into mobile apps, web applications, devices, bots, interactive voice response systems and related users.

Dialogflow can analyze multiple types of input from the customers, including text or audio inputs (like from a phone or voice recording). It can also respond to the customers in a couple of ways, either through text or with synthetic speech.

A Dialogflow agent is a virtual agent that handles concurrent conversations with the end-users. It is a natural language understanding module that understands the nuances of human language. Dialogflow translates end-user text or audio during a conversation to structured data that the apps and services can understand. One can design and build a Dialogflow agent to handle the types of conversations required for their system.

Dialogflow is used in our system for creation of chatbot. Dialogflow contains all the intents for the chatbot which are responsible for the providing response to the user based on their input.

An intent categorizes an end-user's intention for one conversation turn. For each agent, one can define many intents, where the combined intents can handle a complete conversation.

- **Kommunicate:**

Kommunicate is a chatbot technology platform that provides real-time , proactive , and tailored support to growing businesses.

Kommunicate is a bot+human support solution with a product line consisting of Live Chat, Chatbots, Email Support, and Helpcenter.

It provides pre-built UI for chat widget and dashboard to build and deploy your chatbots

Chatbot is an AI-based computer program that converses with customers on behalf of the company's representatives through messaging, websites, or mobile applications.” They're like human-like computer assistants who read user intent, handle requests, and provide timely, appropriate responses.

Kommunicate is used in our system for providing support to the chatbot created using Dialogflow. Dialogflow chatbot takes and gives responses in plaintext. It does not support urls or any buttons. Kommunicate supports buttons, urls, etc.

## ❖Web Technologies:

- **HTML:**

HTML is the first layer of any website and creates the code version of a wireframe on a webpage. These wireframes exist for the styles in CSS and all the bells and whistles in JavaScript.

The letters in HTML stand for Hypertext Markup Language. The markup piece of the name is the most important to remember, as markups are the proper name for HTML elements, which are also called HTML tags. HTML as a whole is the markup that creates the basic elements we view on a website. However, it's important to remember that HTML isn't particularly intelligent. It doesn't make decisions or capture information on its own. It simply renders the scaffolding of the web pages.

- **CSS:**

Cascading Style Sheets, or CSS, is what gives our HTML visual appeal and draws in the user. To put it simply, style sheets dictate the presentation of HTML elements on a page.

CSS is what makes everything not look like a white background with a bunch of Times New Roman texts and blue hyperlinks. Styles are what transition beautiful designs onto site.

A new trend with styling is to use what is called a CSS preprocessor. These include Less Sass and stylists. Pre-processors are scripting languages that compile to CSS for the browser and are very popular as they expedite the development process. They accommodate some programming logic.

CSS pre-processors consolidate styling through “usability” and scale easily for use with large websites. Most front-end engineers of all levels have experience with pre-processors due to their power and flexibility to suit all scenarios, from building small single-page websites to enterprise applications such as Groupon or NBC Universal.

- **JavaScript:**

JavaScript is a runtime language for web browsers. This means that when you open a web page, the page will load both the foundational JavaScript that is standard with the page and any new JavaScript added to a page. The new JavaScript will load in parallel with it and can perform actions and make decisions.

JavaScript differentiates from back-end languages such as Java or Ruby in that it’s visible to the user and is not compiled ahead of time to run secretly behind the curtain. It’s the true programming language of front-end engineering and the underlying language that ties everything together.

- **Django:**

Django is a high-level Python web framework that encourages rapid development and clean, pragmatic design. Built by experienced developers, it takes care of much of the hassle of web development, so you can focus on writing your app without needing to reinvent the wheel. It’s free and open source.

Django is designed in such a way that encourages developers to develop websites fast, clean and with practical design. Django’s practical approach to getting things done is where it stands out from the crowd.

### **3.3 Details of Hardware and Software Requirement:**

#### **❖ Hardware Requirements:**

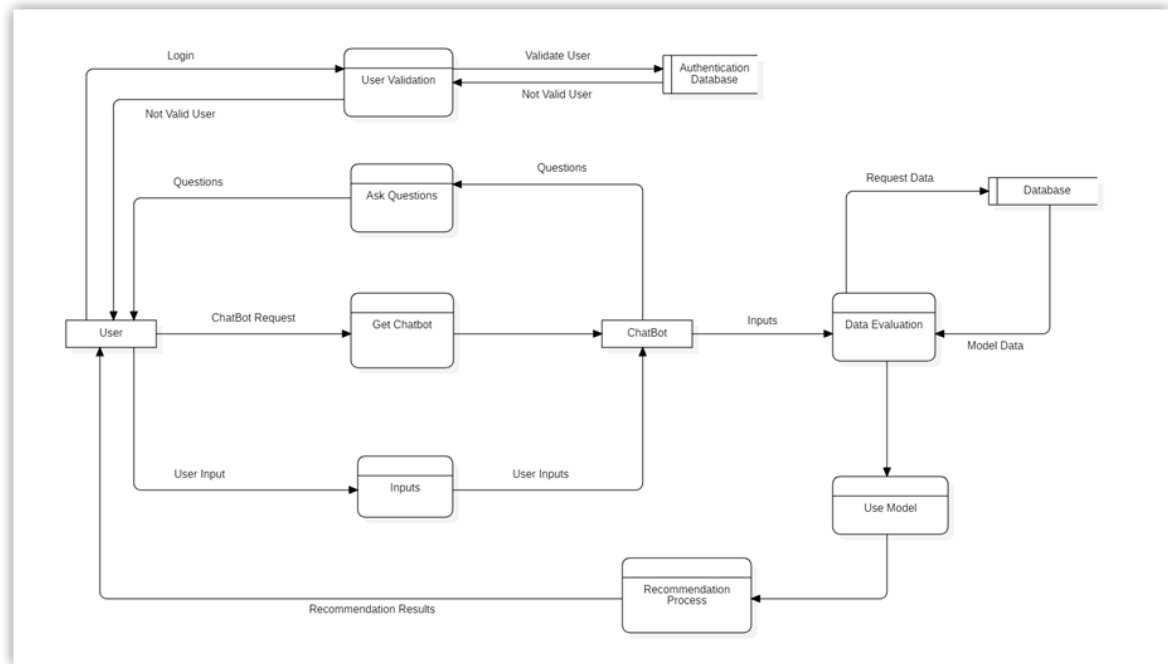
- Processor: Pentium 4 or more for optimum performance
- RAM: Recommended 1GB
- Hard Disk: Minimum 2GB

#### **❖ Software Requirements:**

- Operating System - Certified Distribution of Windows or macOS
- Platform – VS Code, Dialogflow, Kommunicate
- HTML, CSS, JS, Bootstrap
- Python 3.4 or above

# ANALYSIS OF ALGORITHM

## 4.1 Data Flow Diagram:



**Figure: Data Flow Diagram**

In the first step the user has to register/sign in using a valid email and password. After Login, the user will have an option to search directly for a particular place or call a chatbot. After calling the chatbot the user will be welcomed by the chatbot, which will ask the user a few questions for personalized recommendation. After the user answers the given question, the chatbot passes a query to the data evaluation model, which in turn will use the database to recommend results to the user. Later, the system will generate the output by tracking the user input and generate patterns according to the places the user has visited later. After this operation, the user may logout.

## 4.2 Use Case Diagram:

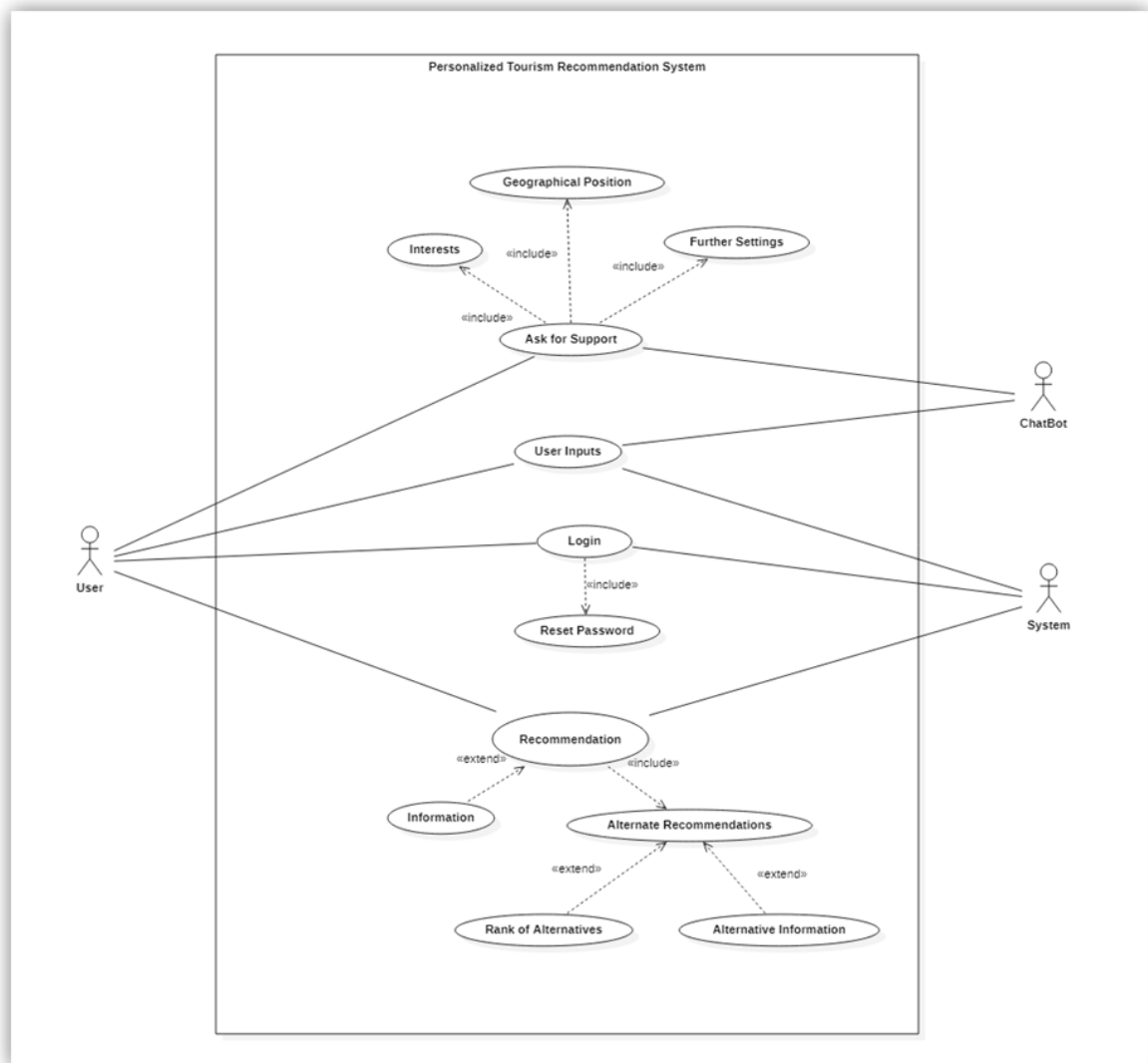


Figure: Use case Diagram.

### 4.3 PERT / Gantt Chart:

The following plan explains the task versus the time (in weeks) needed to complete the project.

The elementary Timeline chart for the development plan is given below.

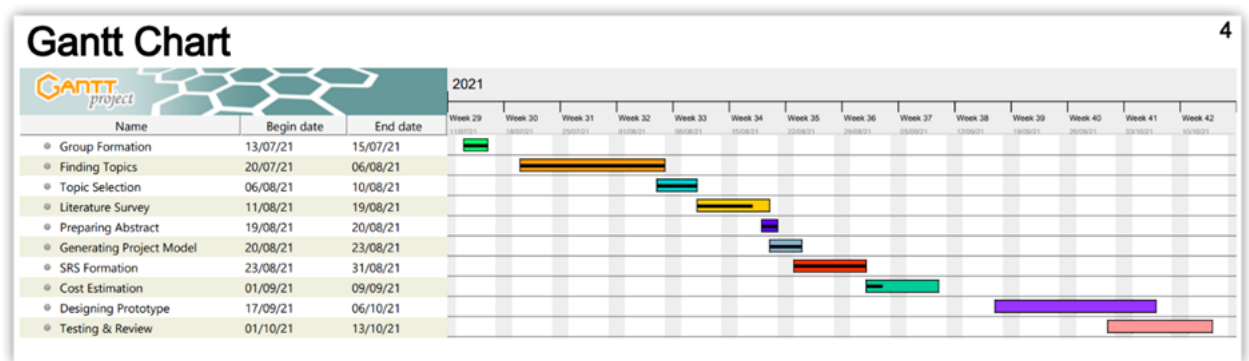
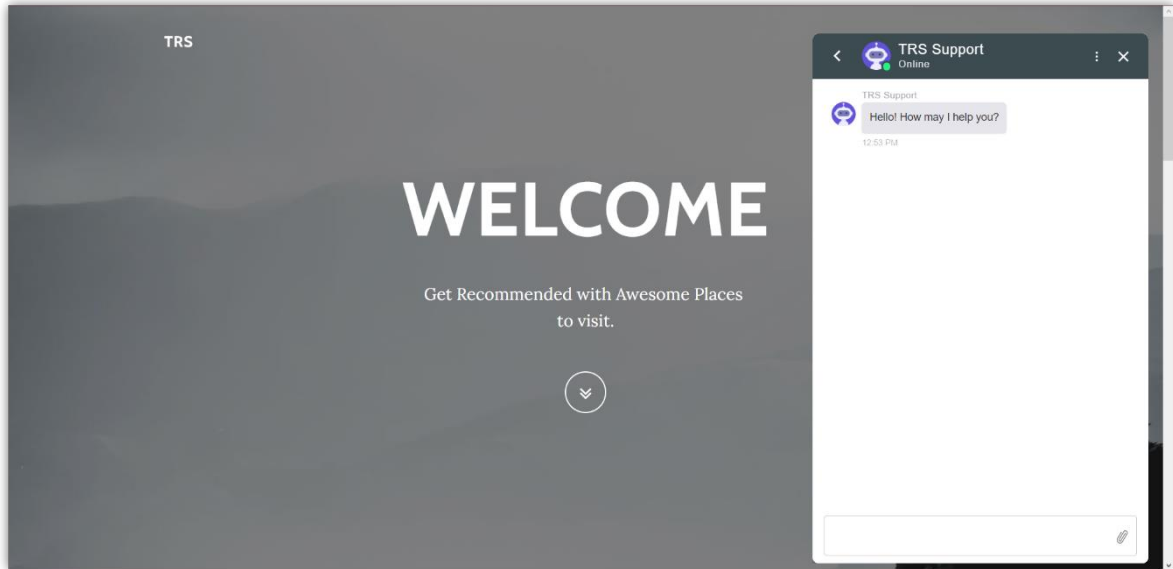


Figure: Gantt Chart

# IMPLEMENTATION & RESULTS

## 4.1 Results with output:



User and system interaction through chatbot

A screenshot of the 'T.R.S.' user registration page. The page has a header with 'T.R.S.' on the left and 'Home' and 'About' on the right. The main heading is 'Register an account!'. Below this, there are several input fields: 'First name', 'Last name', 'Username\*' (with a note: 'Required. 150 characters or fewer. Letters, digits and @/!+/-/\_ only.'), 'Email\*', and 'Password\*'. Below the password field, there are four bullet points listing password requirements: 'Your password can't be too similar to your other personal information.', 'Your password must contain at least 8 characters.', 'Your password can't be a commonly used password.', and 'Your password can't be entirely numeric.'. Below these is a 'Password confirmation\*' field with a note: 'Enter the same password as before, for verification.'. At the bottom left is a blue 'Register' button. At the bottom right is a link: 'If you already have an account, [login](#) instead.'. There is also a small chat icon in the bottom right corner.

User Registration page



Welcome Back!

☐ Remember Me

Login

[Forgot Password?](#)  
[Create an Account!](#)

## User Login Page

T.R.S

HomeAbout

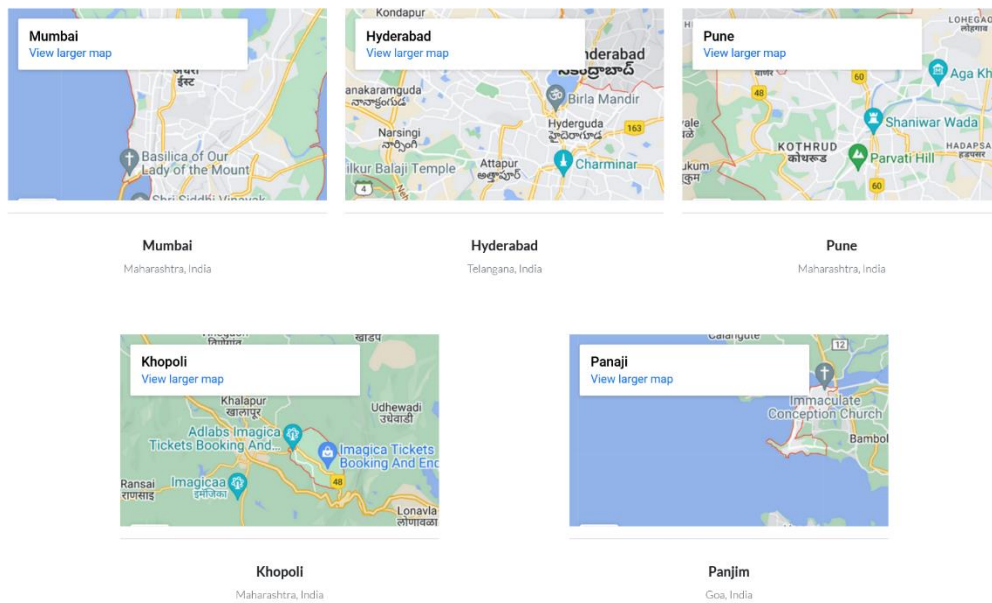
Search History

Timestamp	Name	Age	No. of People	Children	Senior Citizen	Start Date	End Date	City	State	Distance Radius	Results
April 23, 2022 2:20 p.m.	Rishi mule	19	5	True	False	April 29, 2022	May 3, 2022	Satara	Maharashtra	400	Result
April 23, 2022 2:22 p.m.	Shubham Mulik	20	2	False	False	May 1, 2022	May 4, 2022	Pune	Maharashtra	200	Result
April 28, 2022 7:09 a.m.	Rishi Mule	19	4	True	False	April 29, 2022	May 1, 2022	Mumbai	Maharashtra	150	Result

## Search History

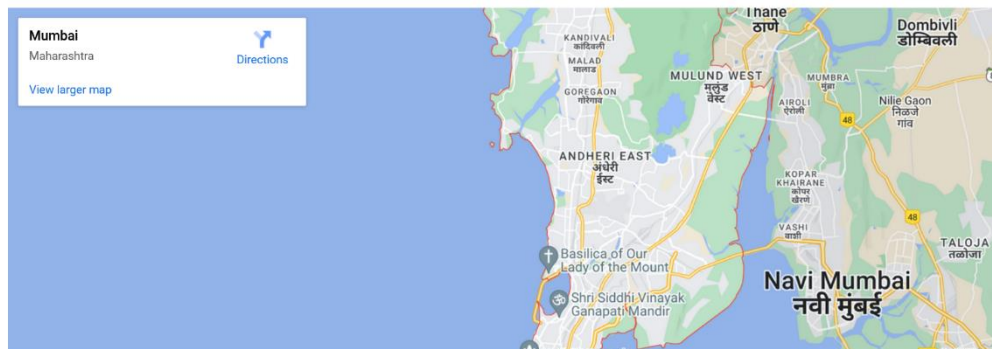
T.R.S.

## PERSONALIZED RECOMMENDATIONS BASED ON YOUR PREFERENCES!



Recommendations given by the system

## MUMBAI



## Description

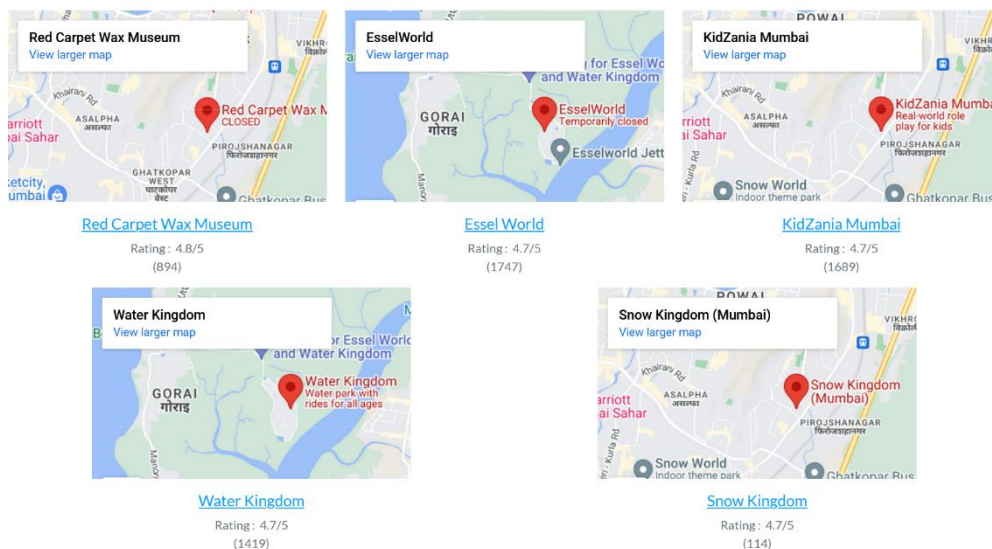
No of Places to Visit : 444

Temperature : 31 °C

Air Quality : 5

[Check for Hotels!](#)

## Top Places to Visit



## Details of any particular city

# CONCLUSION & FUTURE WORK

## CONCLUSION:

The project's aim was to provide tailor-made travel plans for users based on their travel details and preferences. The aim of the project was successfully accomplished by exploiting various Data Science tools and techniques and the recommendations were provided to the user. The scope of the project is really wide and hence there is a lot of room for improvement and future work.

## FUTURE SCOPE:

In future this application can be expanded to provide more accurate results by providing recommendations based on additional factors such as climate or time of the day.

After going through the surveying, it can be gathered that there is a huge scope of application development in the mobile domain. Following the same notion, we can also develop application that can tackle following issues:

- Integration with social media.
- Transport recommendations.
- Budget wise Recommendation.
- Hotel recommendations based on budget.
- Local Emergency Services

Also we would try to improve the Quality of Service (QoS) of the RS in the tourism industry.

## REFERENCES

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3. Murali, M. V., Vishnu, T. G., & Victor, N. (2019). A Collaborative Filtering based Recommender System for Suggesting New Trends in Any Domain of Research. 2019 5th International Conference on Advanced Computing & Communication Systems (ICACCS).
4. Alvo, Mayer & Xu, Hang. (2017). The Analysis of Ranking Data Using Score Functions and Penalized Likelihood. Austrian Journal of Statistics. 46. 15. 10.17713/ajs.v46i1.133.