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Intelligent Tour System

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Abstract*: *The Smart tour app and website presents category classification of mobile travel applications accessible at the moment for tourists in application stores for most popular mobile operation systems (Android). The most interesting category is "Travel Guides" that combines "Information Resources" and "Location-Based Services" category.
The information is given by the users who visited various places and hotels and also will rate the places and hotels. According to rating other user will decide whether to visit the place or not and customize his tour. The objective of the travel and tourism management system project is to develop a system that automate the process and activities of travel and the purpose is to design a system using which can perform all the operation related to travelling.
Keywords*: *Intelligent touring system, Android application, Web application, Artificial intelligence.

I. INTRODUCTION

Over the years, tourism has continued to gain massive interest at a global scale. It is a major foreign exchange earner for a good number of advanced and emerging economies. It is also true that information explosion makes it cumbersome times to access relevant information to enhance decision making. This has given rise to the emergence of intelligent systems or mechanisms that facilitate quick access to relevant content found in the Internet . For developing countries like Nigeria, tourism is one of the untapped but potentially big income generator. There are about 142 tourist destinations that spread across the 36 states of the federal republic of Nigeria. Whereas some exist naturally, others are manmade. In this era that has witnessed rapid advances in information technology, information overload has become a serious problem to those seeking for information online. Recently, intelligent search mechanisms have been deployed on the web that shows that the problem of information overload can be partially eliminated by providing a platform with more intelligence to assist tourists in the search for relevant information . Google.com is an example of an intelligent search engine that helps users with information and another class of intelligent system that has proven relevant in addressing the problem of information overload are recommender systems. In the aspect of tourism, Internet and web technologies have made more readily available information on tourist locations, accommodations, transportation, shopping, food, festivals, and other attractions, thus improving tourism experience. Intelligent Tutoring Systems (ITSs) are instructional systems that use artificial intelligence (AI) techniques in computer programs to facilitate learning. These systems are based on cognitive psychology as an underlying theory of learning, which deals mainly with issues such as knowledge representation and organisation within the human memory as well as the nature of human errors [Shute & Psotka, 1996]. The intelligent tutoring systems adopt a mixed-initiative teaching dialogue, which allows the system to initiate interactions with the learner, as well as interpret and respond meaningfully to learner-initiated interactions [Garito, 1991; Beverly Park Woolf, University of Massachusetts, 1998].
The goal of this research is to design and implement intelligent platform that will aid tourists in Nigeria to have access to information on tourist locations thus help fasten their decision making process.

II. RELATED WORK

Many tour systems have been developed in the past years. In this section, several existing tour system approaches and their limitations are studied. Currently there are a multitude of timetable information systems available for public transport. Most public transport operators offer web-browser-based tools, and an increasing number of services are now also available via tablets and smartphones. However, currently there is no navigation system that completely accounts for hybrid private and public transport networks. Some existing initiatives support routing through public transport networks. However, no current systems supports at the same time customization, in terms of user travel preferences, and real-time information, while promoting an open approach based on common standards. Intelligent Tutoring Systems (ITS) have for objective the combination of educational and computer expertise to replace the human tutor with a machine capable of providing good teaching. It is about designing intelligent systems with adaptable interfaces that allow learners to carry out educational activities that are part of the artificial learning process. Further, the existing applications do not provide any provision to check the status of the feature avaiblity regarding to the tour. Also, there is no existing system that provides a “single application” to manage both tour and transport system and fully automate the existing tour system under one roof of web application and android application.

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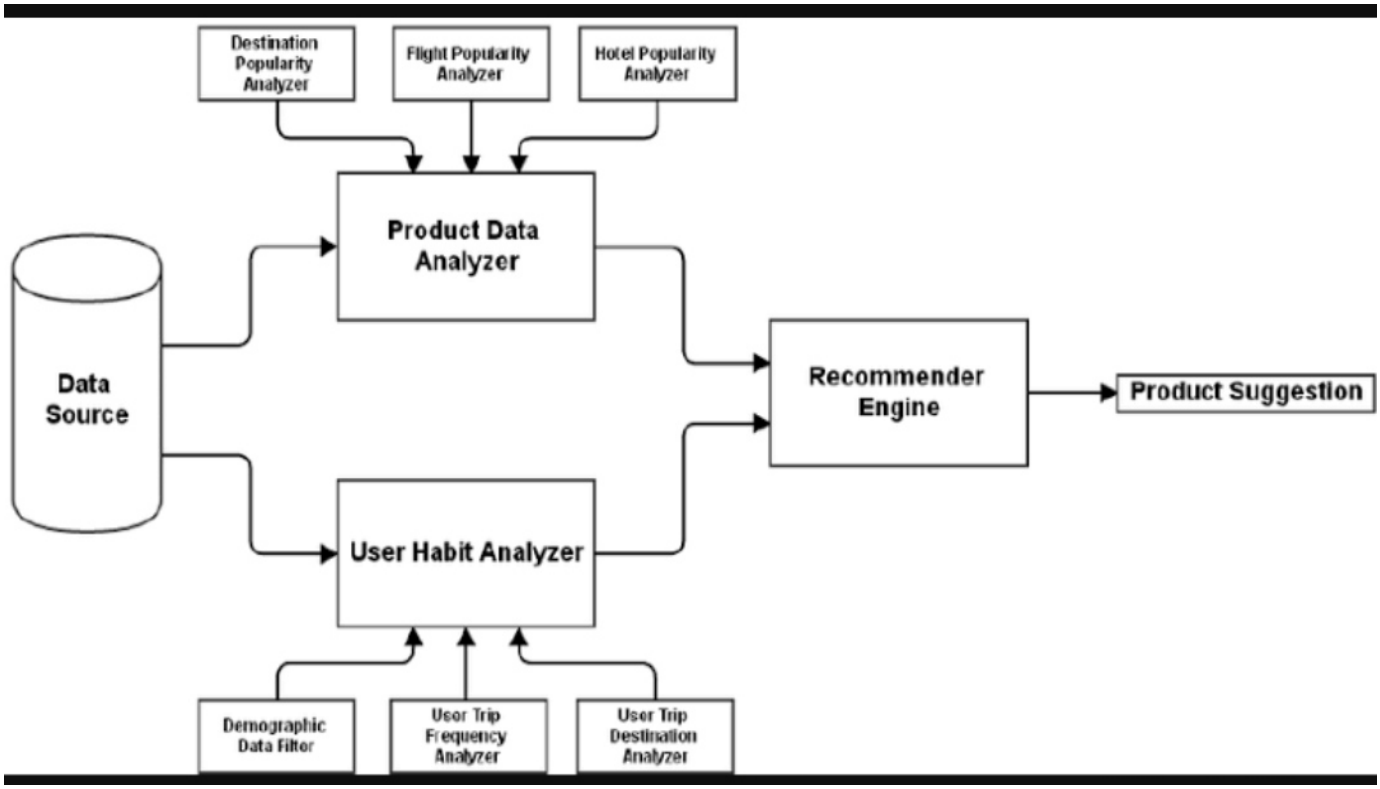
III. PROPOSED SYSTEM

This project has a login page which allows only the registered user to login and thereby preventing unauthorized access. This system can be used to view the location view in map that the user wishes to reach. The user can also find the paths to follow to reach the final destination in map which gives a better view to the users. Since the location can be viewed in map, the user can even zoom in and zoom out to get a better view. The usage of this application greatly reduces the time required to search for a place. The application also leads to quicker decision making with respect to places to visit. Intelligent tour system application is specially design for the customer who loves travel and provide easily access the relevant information and make necessary travel arrangements. It also help in finding the best suggestions about hotel, food places, shopping places, event places and book them as per customers requirement. The main advantage of this application is that it will ensure accurate working of the tour system which is done automatically and it will helpful for finding places like shopping ,food, event , parking slot, transport vehicle booking which is time consuming.

When planning a trip, users always have a particular preference for travel. The system does not limit the user's limited query options (such as location, activity, or time period), but instead uses any textual description as a key to personalize requirements. In addition, a diverse and representative recommended travel route is also needed. The previous work elaborated on excavating and arranging existing routes from check-in data. In order to meet the needs of automotive travel organizations, the system claims that more POIs should be extracted. Therefore, proposes an efficient keyword-based representative travel route framework that takes advantage of the user's historical flow record and knowledge in social interactions [1]. Explicitly, the system designs a keyword extraction module to classify POI-related tags in order to effectively match query keywords. The system further designs route reconstruction algorithms to build route candidates that meet the requirements [1]. In order to provide appropriate search results, here existing routes are taken in account to generate new route. In order to evaluate the effectiveness and efficiency of the proposed algorithm, extensive experiments were conducted on location-based real social network datasets. The minimum spanning tree algorithm improves the recommendation strategy by considering the cost of the node. The cost is a composite score obtained from the POI score and the check-in score. The execution speed here has been improved. The kruskal algorithm is used here as MST. It found the least weighted edge connecting any two trees in the forest. It is a greedy algorithm in graph theory because it finds the minimum spanning tree that connects weighted graphs, increasing the arc cost per step. This means that it finds a subset of the edges, which forms a tree that includes every vertex with the smallest total weight of all the edges in the tree.



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IV. IMPLEMENTATION

Elements in the system are:

1) *Server:* This entity stores all the resource information provided by various peripherals of the toll and parking system. It allows the user to take the appropriate action regarding booking of slot and planning trip.
2) *GIS Module:* This module handles the user's control information, including map roaming, zoom, query function (as shown in Figure 2 below) and guide function, such as pen click information explaining, tourist facilities searching, and a map database accessing. Dynamic path analysis and the shortest path function and other advanced services should also be completed in conjunction with this module.
3) *Website:* A user- friendly .Net platform is used to interact with the system. It contains various webpages i.e., to book the hotel or other available slot in the desired area, to recharge the smart card and to look for the transactions. Universal availability of tour slots is displayed on the website.
4) *Processing Unit:* 1. Operating System : Windows, Linux 2. WAMP/XAMPP : Mysql 3. Jdk 1.8 : For Java Platform 4. Apache Tomcat 7.0 Above : For Java Servlets
5) *Peripherals:* 1. Processor : min core i3 2. RAM : min 4GB 3. Hard Disk : 500GB 4. Android Phone : Android cell Phone of any vendor

V. PROPOSED METHODOLOGY AND DISCUSSION

As given in introduction our system provides recommendation to users according to his/her point of interest, hotel budget, nearest hotels and many more. For solving this problem we proposed the methodology like collaborative filtering.

Proposed system includes different algorithm like k-means and knn algorithm both the algorithms are used in recommendation system.k-means is used in recommending similar type of places which is in users are interested . knn algorithm provides recommendation on the nearest hotels to the recommended places .

1) Means Algorithm for recommending places k-means is the clustering algorithm used in finding similar type of places like which are given by users point of interest . in this system it is used in recommendation of places according to the clustering. it divides data sets into different clusters and then find the centroid of the each and every cluster. it is basically works on clustering and finding mean .it provides simple algorithmic steps for clustering which are following : Algorithmic steps for the k means algorithm

   step 1: classification of given datasets in clusters.
   step 2: selects initial centroids as k from each cluster
   step 3: repeat step of centroid calculation using following formula.

$$J(V) = \sum_{i=1}^{c} \sum_{j=1}^{c_i} \left(\left\| x_i - v_j \right\| \right)^2$$

   step 4: recompute the centroids of each and every cluster
   step 5: until centroids remains same. In the algorithm initial centroids are chose randomly. Centroids are nothing but the means of the different clusters
   This is used to solve the clustering problem which results in providing a places which are similar type as historical places, hill stations, temples etc.
2) KNN Algorithm for finding nearest neighbour In our proposed system : KNN algorithm is used for finding nearest neighbour using distance metrics. Like it is used in the finding the nearest hotels to the recommended places so that user can easily chose the nearest hotel for staying. and also using this algorithm no of nearest hotels are recommended to the users then they can choose the hotels which are near to visiting places as well as that hotels are in users budgets. so our system asks users the distance or area under the places for visiting. Like if user wants to visit places in range of 76 Km in the any particular area then system provides visiting places list in that area as well as nearest hotels in budget. Knn algorithm is used in finding the nearest neighbour using distance relationship formula.in this it requires no of calculation in finding the hotels in particular range. Let's see the knn algorithm working. consider that we have the nearest number as K .and we want to find the minimum distance between two points so our problem is solve using knn algorithm .this algorithm uses Euclidean Distance to find the nearest neighbour using the following formula.

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EuclideanDistance(x, xi) = sqrt(sum((xj – xij)^2))
Algorithmic steps for the knn algorithm
step 1 : find parameter K = no of nearest neighbours.
step 2 : calculate the distance between the given query and datasets sample.
step 3 : sort the distance according to minimum to maximum.
step 4 : determine the nearest neighbours according to the k's minimum distance.
step 5 : gather the category of that nearest neighbours .
step 6 : use similar category of nearest neighbours for as prediction value of query. so using above algorithm we can easily find the nearest hotels and recommend the users according to his requirements given and he/she easily get the all the recommendation of hotels which are near to the places recommended by the k-means algorithm

VI. PROGRAM FLOW CHART OF TOUR GUIDE

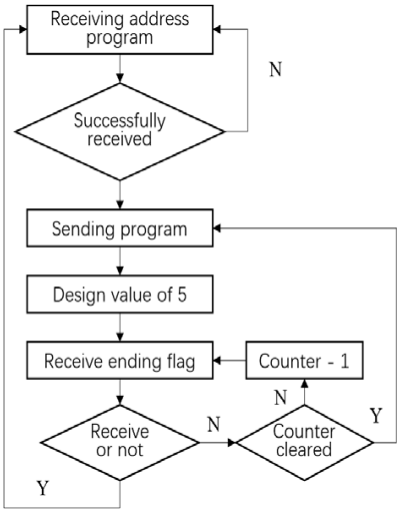
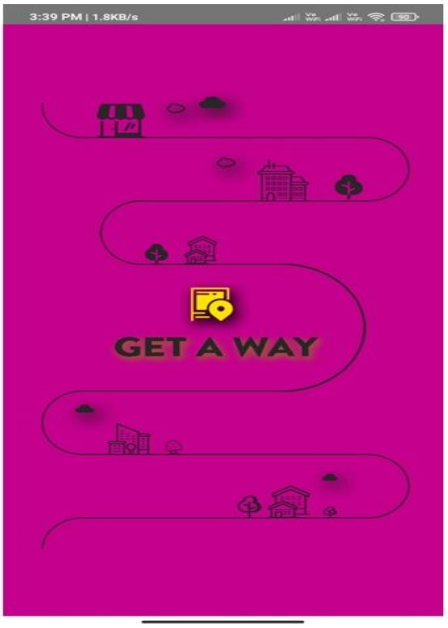
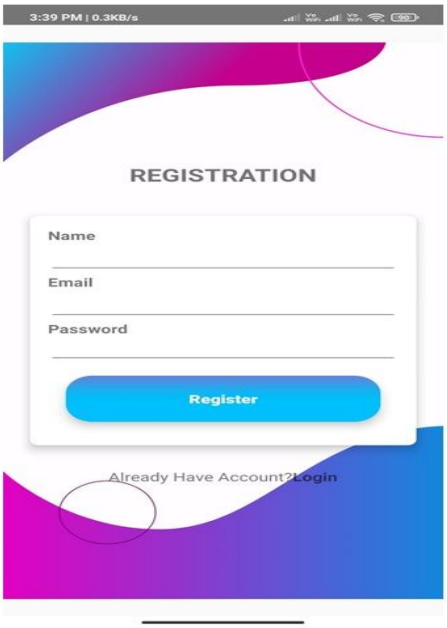


Fig.4. Program flow chart of tour guide

VII.RESULT

A. Android application Screenshot





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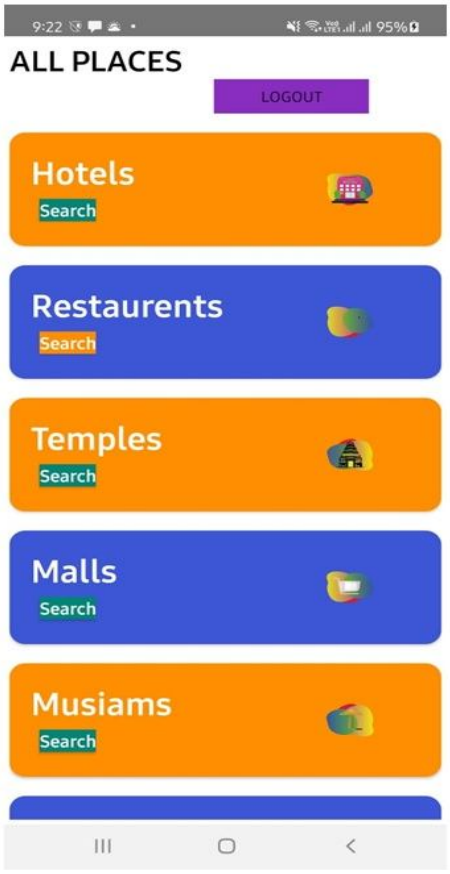

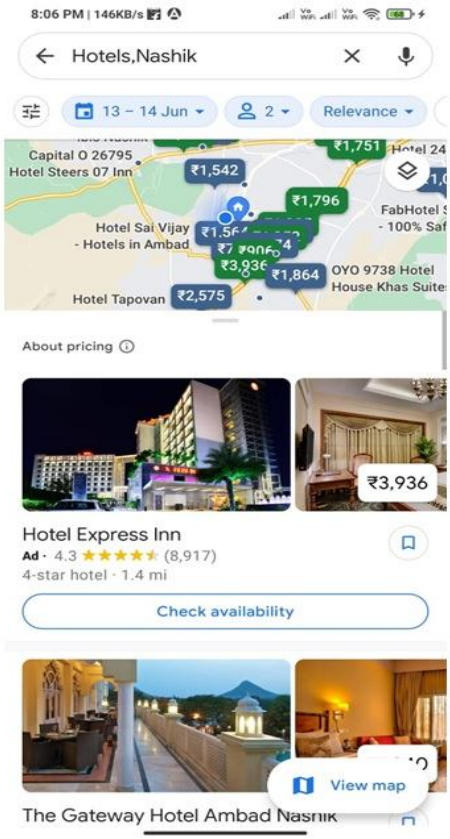

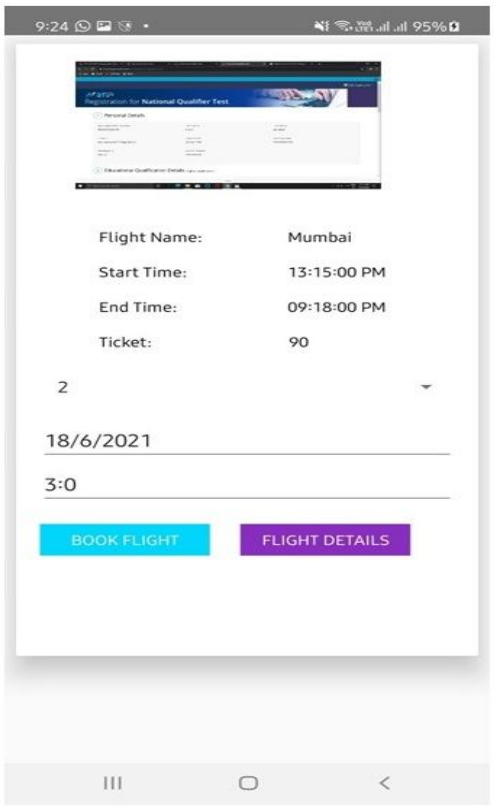

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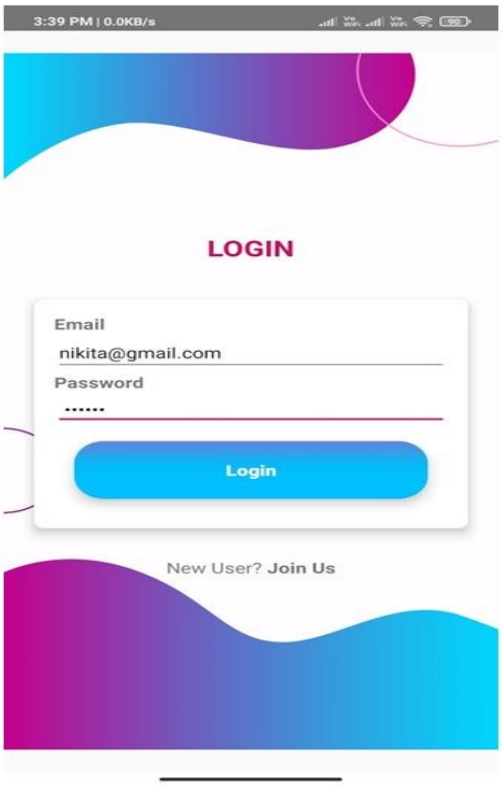

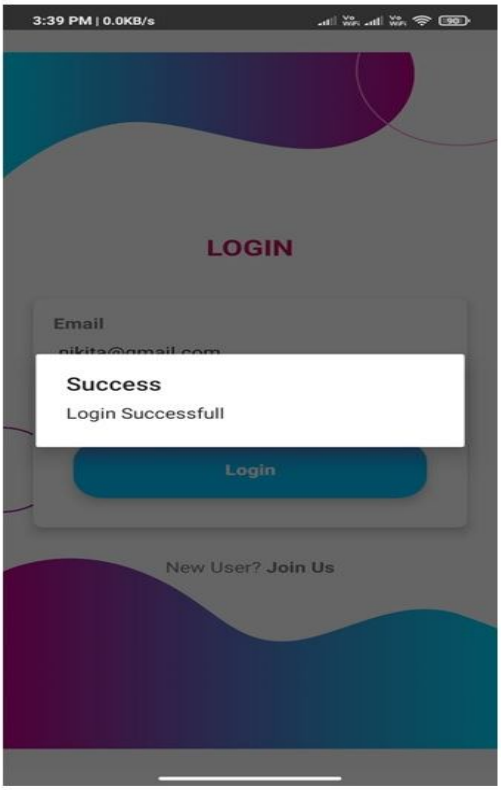

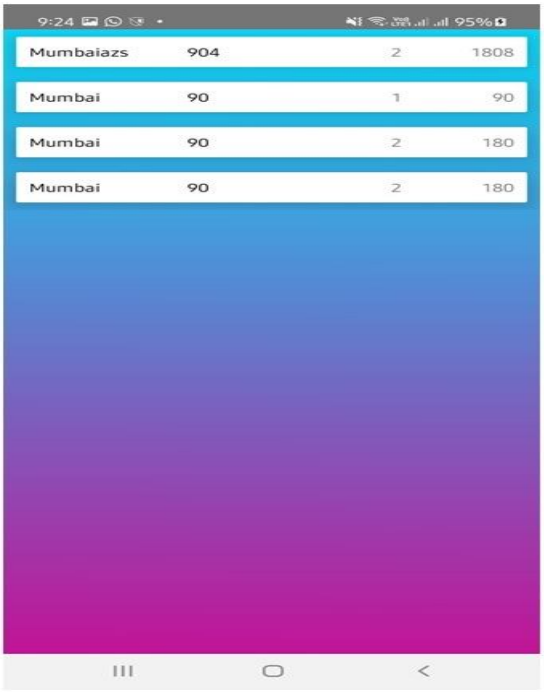

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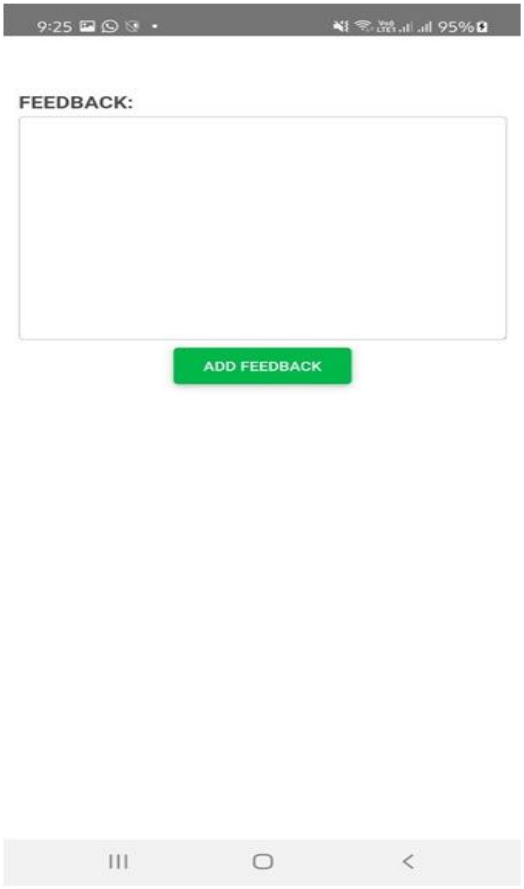

B. Web Application Screenshot

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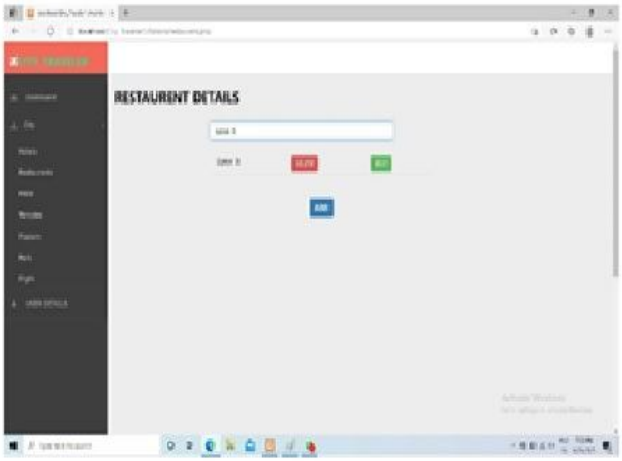

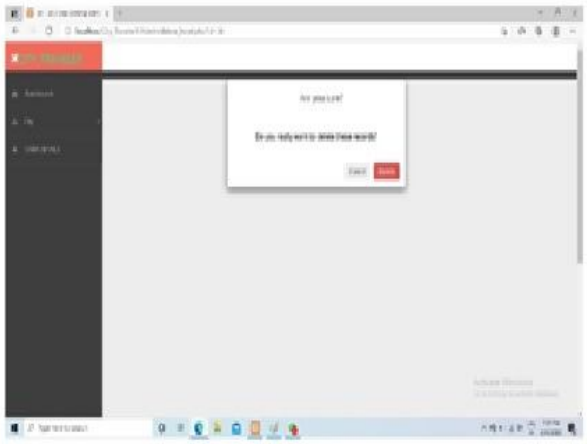

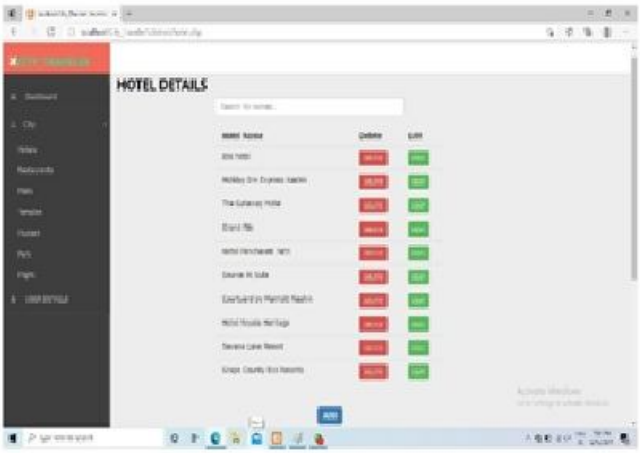

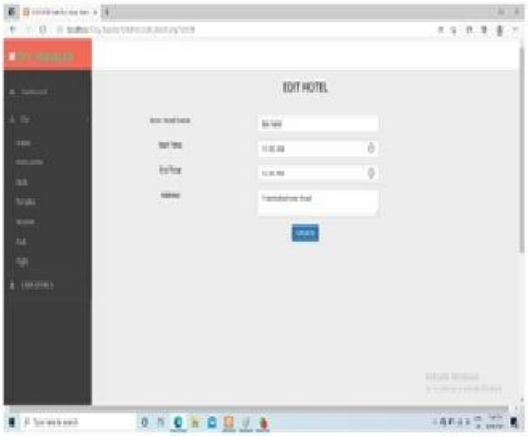

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VIII. CONCLUSION

In Conclusion ,India is a country where in a few days holiday, you can enjoy a lot. The problem is that we although having many websites application but they offer different kind of services. The customer are enjoying a lot but there is a lack of relationship between travel agency and customers & hence we are establishing that relationship by caring and serving all customers in the same manner that we wish to be served. this software will solve many problems in India relating to management of product and information pertaining to tourism. Tourists will get acquainted with all the tourist sites in India and information pertaining to those sites without physically extracting information from people or having to travel long distances to see what the location has to offer. With the availability of the Internet, users have access to this application; hence they are empowered with current and relevant information pertaining to tourism in India. The application will go a long way in assisting tourists in decision making, and also as a source of revenue to the country. ITS will make tourism round the country fun and easy because of easy access to relevant information.

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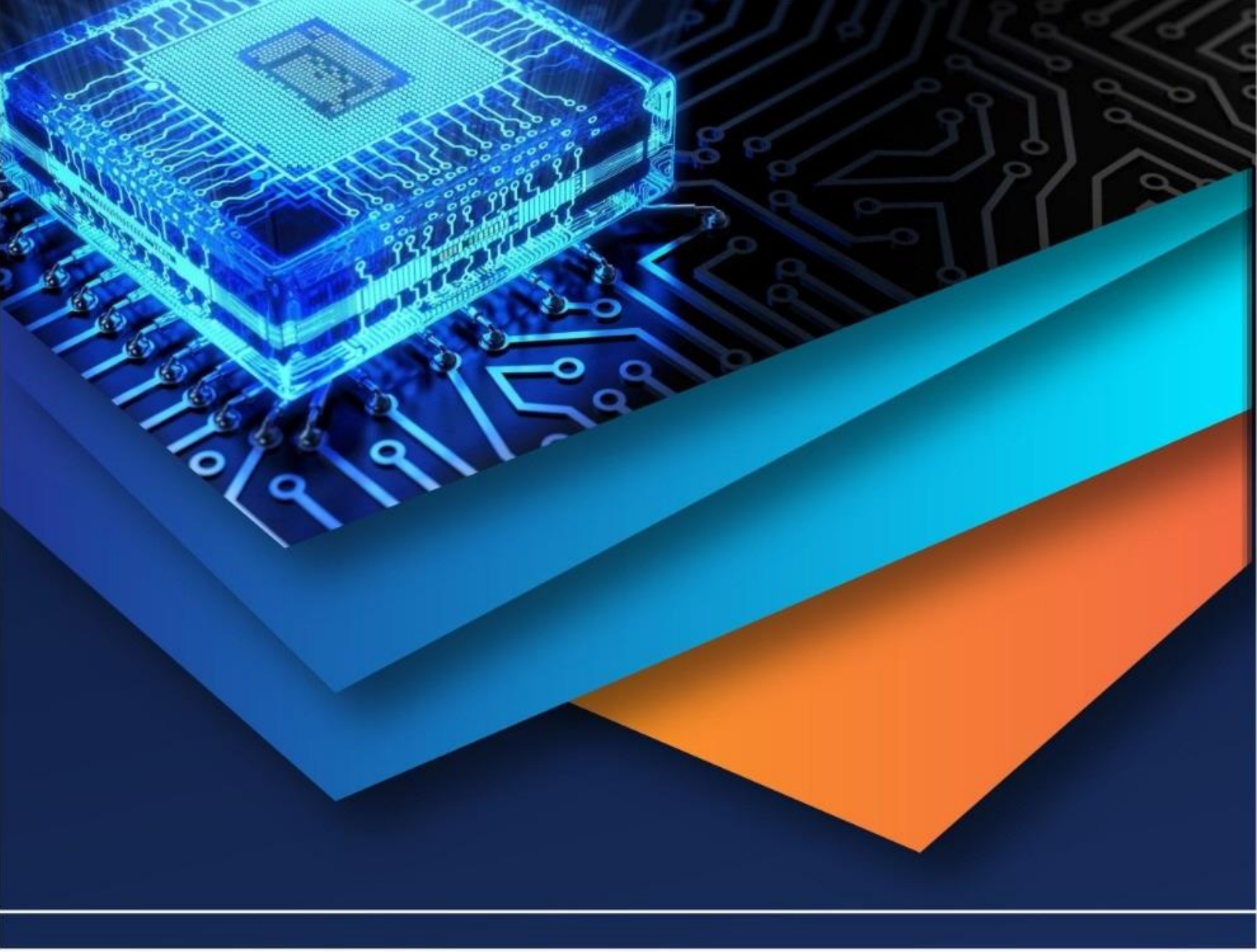

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