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AI Based Reservation System

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ABSTRACT

The world globalization is widely used, and there are several definitions that may fit this one word. However, the reality remains that globalization has impacted and is impacting each individual on this planet. It is defined to be greater movement of people, goods, capital and ideas due to increased economic integration, which in turn is propelled, by increased trade and investment. It is like moving towards living in a borderless world. With the reality of globalization, the travel industry has benefited significantly. It could be said that globalization is benefiting from the flight industry. Regardless of the way one looks at it, more persons are traveling each day and are exploring several places that were distant places on a map. Equally, technology has been growing at an increasingly rapid pace and is being utilized by several people all over the world. With the combination of globalization and the increase in technology and the frequency in travel there is a need to provide an intelligent application that is capable to meeting the needs of travellers that utilize mobile phones all over. It is a solution that fits in perfectly to a user's busy lifestyle, offers ease of use and enough intelligence that makes a user's experience worthwhile. Having recognized this need, the Agent based Mobile Airline Search and Booking System is been developed that is built to work on the Android to perform Airline Search and booking using Biometric. The system also possesses agent learning capability to perform the search of Airlines based on some previous search pattern.

Keywords: Artificial Intelligence, Airline Reservation, Biometrics, Chatbot, Flight Reservation System, Intelligent application

INTRODUCTION

The Airline industry controls the world of travel and this industry alone has managed to reduce the distance between places that are geographically miles apart to merely in hours and minutes. According to Investopedia, "Few inventions have changed how people live and experience the world as much as the invention of the airplane". There are thousands of airlines worldwide thatcover thousands of miles daily and travel has become an acceptable part of our routine. Therefore, to ensure that we get to where we need on time, individuals have to book flights in advance or have someone book the flights on their behalf. In some situations, unless a flight is booked well in advance, then one may have to miss such a flight. As the world progresses in these areas, it has become apparent that technology has to play a key role and hence many individuals use the internet to assist in making world of travel a little easier. We find many persons booking flights, cancelling flights and accessing general information about flights via internet.The technological advancements that we have made over the last ten years have tried its best to make the world of travel a lot easier [1].

Various technologies have been employed over the years to address the varying concerns of the travel industry [1]. Still, we see yearly in each winter airports in Europe, England and even North America getting jammed with persons, because of cancelled flights and consequently individuals sleep at airports. All these are normally caused by bad weather. However, a lot of this could have been aborted if these travellers had the technological means to manage their flight experiences in a better way. When we look closer home within the Caribbean, we might not suffer from snowstorms that leave our airports inundated but we experience lengthy delays and cancelled flights. With these as background, we here have developed an IntelligentAgent based Mobile system that can provide users the capability to search and book flights and additionally avail enough information so that users of this system will not have to sleep in airports. This system also provides an additional component to users with the capability to see the reviews of airlines and the services so that they might not have to make a mistake that probably was made by someone else and already noted. The system possesses unique feature of booking flights using mobile handset with Biometrics to avoid frauds in credit card payment.

LITERATURE REVIEW

INTELLIGENT AGENTS

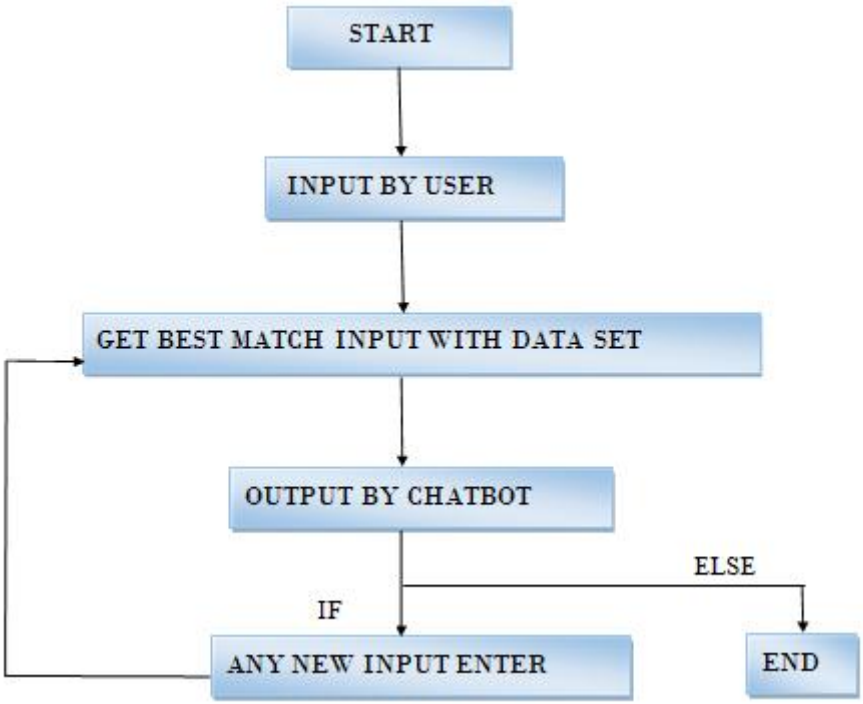
Agent technology has emerged as formidable IT area. Agents can be defined to be autonomous, problem-solving computational entities capable of effective operation in dynamic and open environments [6-10]. An agent is something that acts in an environment. For agents to be classified as intelligent they not only must exhibit intelligent behaviour but they must have the ability to learn and follow similar patterns of learning. Learning is defined to be the acquisition of knowledge or skills through experience, practice, or study, or by being taught [11][12]. Learning is done by humans, animals and some machines. In order for an agent to learn, they must be able to act intelligently. The concept of Agent Learning and the consequent artificial intelligence is not new [13][14]. Since that time, hundreds if not thousands, of articles have been published on the topic, and at least two books [15 - 20].

A. Artificial Intelligence in Flight Reservation Systems Artificial Intelligence (AI) is the key technology in many of today's novel applications, ranging from banking systems that detect attempted credit card fraud, to telephone systems that understand speech, to software systems that notice when you are having problems and offer appropriate advice. These technologies would not exist today without the sustained federal support of fundamental AI research over the past three decades [21]. The area of flight reservation systems is no exception to the existence of artificial intelligence. Many airlines have opted to divest most of their holdings to Global Distribution Systems (GDS) due to which many systems are now accessible to consumers through Internet gateways for hotels, car rental agencies, and other services as well as airline tickets. A traveller or a travel agent can chalk out an itinerary using a GDS which is a global system interconnecting airlines, hotels, travel agents, car rental companies, cruise liners etc. [22]. There are four major Global Distribution Systems, and they are AMADEUS, GALILEO, SABRE and WORLDSPAN. The SABRE reservation system is used by American Airlines and boasts an intelligent interface named PEGASUS, which is a spoken language interface, connected to SABRE which allows subscribers to obtain flight information and make flight reservations via a large, on-line dynamic database accessed through their personal computer over the telephone. As the technology advances and more persons are becoming smart phone users, the need exists to give internet users from desktops, laptops and smart phones the ability to search for flights and to book flights online. Therefore, we have several applications that have given users the ability to work on smart phones such as blackberries, iPhone and android. One of the major concerns for Smartphone users is the actual booking of the flight because this includes the use of credit cards and with the many incidents of identity theft and fraud over the internet, this raises a red flag. However, we offer in this paper, to prospective users a secure environment to do these transactions without worry or concerns.

However, before going into those details, we look in brief about Biometrics. Biometrics is the science and technology of measuring and analysing biological data. In information technology, biometrics refers to technologies that measure and analyse human body characteristics, such as DNA, fingerprints, eye retinas and irises, voice patterns, facial patterns and hand measurements, for authentication purposes [23]. In this research area of biometrics, we will focus on fingerprint capture, verification and encryption [24-26]. Biometric is a standard now that all laptops come with biometric security options that give users the ability to store their passwords as biometric imprints and log onto their devices using their fingers as opposed to typing in passwords in a traditional way. We will now present the details of how biometric data is captured and verified. To convert the biometric input, a software application is used to identify specific points of data as match points. The match points in the database are processed using an algorithm that translates that information into a numeric value. The database value is compared with the biometric input from the end user who has entered into the scanner and authentication is either approved or denied [23]. In order to enrol a fingerprint several steps are performed [27] as shown in Fig 1. Therefore, we see the use of biometrics as a very secure way of implementing security in a system that users' private and sensitive data are being accessed and want to keep out of unauthorized personnel to prevent identity theft. It has been seen from the literature that work has been done in the use of AI in flight reservation systems and technologies been used to avoid identity fraud in payment. But in all the above system AI search algorithms, being used to perform the search of airlines with some intelligence and also security has been used to avoid credit card theft in payment. But still the system lacks intelligence and smartness in searching of airlines where again the burden falls on the user towards refining the search, making decision based on retrieved results. The system also possesses no facility ofsearching based on past experience or so. Also, the system gives no information on the rating of airlines and so. In addition to search, there still exist challenges to facilitate a secure platform that users can trust to carry out their transaction in a technical space free from interference. The applications that exist are good but in many of the instances, they provide real time flight information to prospective clients and facilitate payment with the use of third-party intervention. All these systems been developed as web based only which can be accessed from desktop or mobile and not for mobile handset as such. These drawbacks that exist can be accomplished by means of intelligent agent which is however seen that no research exists or been carried out towards airline reservation and booking system. Our proposed system [5] so allows the users to search for airline based on their preference using intelligent agent to make intelligent decision and display on mobile handset by applying fuzzy preferences. Also, extend the Intelligent

Search Agent with learning capability that may be searching for a flight with minimal individual preferences based on previous search experience of the agent. System also aims to protect users from identity theft and fraud by providing a platform to validate airline based on flight selection by user and facilitate booking and cancellation of flights by customers using their own credit cards using biometric and encryption technology to ensure a secure platform.

FLOW CHART



WORKING

In this project we use data set to do conversation with user. firstly, we train dataset then run main file to open chatbot once open. A Chatbot can chat if user gives input to the chatbot, chatbot find the best match in the data set. After matching it gives output to the user. User gives more input to the Chatbot it finds based match again in the data set this process will continue until user stop to give input.

SOFTWARE REQUIREMENT

Python
Open cv

CONCLUSION

Humans try to reach out to other humans when in need of love and empathy. However, in modern times, where mobile phones have become the biggest companies of the humans, it is not wrong in implementing an empathetic chatbot, which would help the user in times of need.

We can see that attempts are being made to turn these heartless chatbots into empathetic friendly companions of human. It makes easy to human being to access on find info.

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