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**INTRODUCTION TO PYTHON**

Python is an interpreter, object-oriented, high-level programming language with dynamic semantics. Its high-level built in data structures, combined with dynamic typing and dynamic binding; make it very attractive for Rapid Application Development, as well as for use as a scripting or glue language to connect existing components together.

Python's simple, easy to learn syntax emphasizes readability and therefore reduces the cost of program maintenance. Python supports modules and packages, which encourages program modularity and code reuse.

The Python interpreter and the extensive standard library are available in source or binary form without charge for all major platforms, and can be freely distributed.

**History of Python:**

Python is a widely used general-purpose, high-level programming language. It was initially designed by Guido van Rossum in 1991 and developed by Python Software Foundation.

It was mainly developed for emphasis on code readability, and its syntax allows programmers to express concepts in fewer lines of code.

BUS TICKET RESERVATION

**INTRODUCTION**

Travelling is one of the best way to enhance personal growth. It enables you to do things different from your daily routines. Travelers travel through various sources. However, they mostly prefer bus for comfort travel.

Online bus booking is an innovative program specifically for travelers for easy and safe booking. It also avoids standing at long queues for buying tickets at offline bus counter.

This program is developed using python programming language and the data is stored in mysql server.

**ABSTRACT**

The present growth of technology have led to perform many actions or operations through online. This project deals with bus ticket reservation system. It is a python based project where mysql acts as an backend.

Through bus ticket reservation system passengers can easily book their tickets through online. People can select their destination, check the number of seats available in the bus, they can also check the presence of window seat and aisle seat and book their seats according to their wish.

Passengers can also make online payment through debit\ credit card, net banking, etc. Passengers can also cancel their tickets even after their registration through online is done and ticket fare is refunded immediately. All the information are stored in a database and are regularly updated.

**MODULE DESCRIPTION**

* **Bus schedule module**: It contains all the functionalities related to the bus schedule.
* **Ticket booking module**: It manages all the operations related to ticket booking.
* **Booking module**: Manages the booking related functionalities.
* **Customer module**: This module manages customer functionalities.
* **Bus route module**: bus route module contains all the CRUD operations related to bus route.
* **Seat module**: Seat module contains all the required functions which include adding, viewing, deleting.
* **Import os**: The os module in the project provides function for interacting with the operating system .os, comes under python’s standard utility modules. This module provides a portable way of using operating system dependent functionality.
* **Import platform**: The platform module in python is used to access the underlying platform’s data such as hardware, operating system , and interpreter version information.
* **Mysql connector**: Mysql connector is a drive for connecting mysql database to server through open database connectivity application program interface (API), which is standard means of connecting. It is used to connect mysql database with python.
* **Insert function**: insert () is an inbuilt function in python that inserts a given element to a given index in a list parameters. The index at which the element has to be inserted.
* **Remove function**: remove () is an inbuilt function in python programming language that removes a given object from the list.

**PROPOSED SYSTEM**

The **Online Bus Ticket Reservation System** is a web-based application that allows visitors check bus ticket availability, buy bus ticket and pay the bus ticket online (Asaad, Ayad and Hayder, 2012). This system is established for all the home/office users after gaining access from the administrator. According to Invaderzim (2011), Online Bus Reservation System provides bus transportation system, a facility to reserved seats, cancellation of seats and different types of enquiry which need an instant and quick reservation. This system can be used by the users in performing online reservation via internet for their all business purposes. Users can use this program directly on their websites and no need to install it.

The use of bus traveling is a large growing business in Nigeria and other countries; hence bus reservation system deals with maintenance of records of each passenger who had reserved a seat for a journey. It also includes maintenance of information like schedule and details of each bus (Shivaji, 2010). Also, we get to know that there are many operations, which they have to do manually.

It takes a lot of time and causes many errors. Due to this, sometimes a lot of problems occur and they were facing many disputes with customers. To solve the above problem, and further maintaining records of items, seat availability for customers, price of per seat, bill generation and other things, we are offering this proposal of reservation system. The reservation system has three modules. First module helps the customer to enquire the availability of seats in a particular bus at particular date, the second module helps him to reserve a ticket and with the third module he can cancel a reserved ticket.

However, since the current reservation system is still conducted manually and separately at each branch, contact must be made by each branch’s front-officer to the head office for each customer’s enquiry in order to get the latest update on schedule, seat availability and other reservation-related information; as well as to avoid duplicate bookings or over-capacity. There is also a physical limit to the reservation availability as each branch only operates during certain hours and reservations can only be made on-the-spot. These limitations are not the only issues the company is currently facing. Other factors that create problems include human errors (e.g. miscalculations in ticket price, mistakes in noting passenger data, etc.), the fluctuation of passengers during certain periods of time that causes a bottleneck in the check-in process because of the inability of the frontofficer to multitask and the lack of overview or report of the on-going business; making it difficult for the company to judge past/current performance or plan future improvements. Looking at these problems and limitations, it is clear that both the company and the customers require an integrated reservation system that is more efficient in information update and reservation handling and also easy to use. Electronic tickets, or e-tickets, give evidence that their holders have permission to enter a place of entertainment, use a means of transportation, or have access to some internet services.

Bus Ticket Reservation System enables the customer to buy bus ticket, make payment, and ask for information online easily. Furthermore, staff can sell bus ticket using Bus Ticket Reservation System after check bus ticket availability for the customer and print the bus ticket to the customer that queue up in the counter. The method to solve this problem is to create an online buying bus ticket system. Customer can buy the bus ticket over the Internet, 24 hours a day, 7 days a week and the bus ticket can't be lost, stolen or left behind. In addition, the online system lets the customers check the availability of the bus ticket before they buy bus ticket (Wee, 2007). Furthermore, customers no need to pay cash to buy bus ticket because they can pay the bus ticket by using deposit slip number order by bank.

**HARDWARE AND SOFTWARE REQUIREMENTS**

**HARWARE REQUIREMENTS:**

* PROCESSOR:INTEL PENTIUM (ANY) OR AMD ATHALON (3800+- 4200+ DUAL CORE)
* MOTHERBOARD :1.845 OR 915,995 FOR PENTIUM or MSI K9MM-V VIA K8M800+8237R PLUS CHIPSET FOR AMD ATHALON
* RAM :512MB+
* Hard disk :SATA 40 GB OR ABOVE
* Pen drive :(If back up required)
* MONITOR :14.1 or 15 -17 inch
* Keyboard and mouse:
* Printer :(if print is required – [Hard copy])

**SOFTWARE REQUIREMENTS:**

* Windows 10
* Python implementation
* Python IDLE
* My-sql 5.5 for backend.

**OBJECTIVE OF STUDY**

The main purpose of this study is to automate the manual procedures of reserving a bus ticket for any journey made through Imo Transport Company (ITC). This system is said to be an automatic system and customers can select seats by themselves. Specifically, objectives of this project will consist of:

**i)** Providing a web-based bus ticket reservation function where a customer can buy bus ticket through the online system without a need to queue up at the counter to purchase a bus ticket.

**ii)** Enabling customers to check the availability and types of busses online. Customer can check the time departure for every ITC bus through the system.

**iii)** Easing bus ticket payment by obtaining a bank pin after payments is made to the various designated banks.

**iv)**Ability of customers to cancel their reservation.

**v)** Admin user privileges in updating and canceling payment, route and vehicle records.