**Project 5**

**DYSON GROUP ONLINE BUS BOOKING SYSTEM**

This system should help customers to book a seat for their journey, book bus. This system should also help the owner to manage the coaches, employees, clients, services etc.

Bus Reservation System will increase the booking process faster, convenient, and comfortable. Customers can book their desired seats. They can check the availability of posts on a specific date. The customer can check availability, book ticket, or cancel ticket 24X7. The online system is available to use anytime.

User doesn’t require to visit any office. They just need internet and device to use our system. They can check route, price, class etc.

They can pay fare using a credit card, debit card, internet banking, online wallet like Paytm and cash too. Managing buses, employees, and salary should be very comfortable using this system.

This is a safe and secure way to expand the business. System decreases the human efforts and increases customer satisfaction.

**MODULES OF ONLINE BUS BOOKING SYSTEM**

There are several modules required to complete this system. Here we are discussing the main modules or core modules of the system.

**Admin Profile:**

Admin is super user of our system. Admin can view all data in the system. Admin must log in to the system then there is authentication process. Admin view bus details verified the bus details, check the employee data.

**Customer Profile:**

The customer is the end user of our system. The customer can see bus details, check availability, book the ticket, make an enquiry, and make payment to confirm a seat. At any point of time before boarding of bus customer has all right to cancel tickets.

**Employee Profile:**

Employees are basically helping hands in bus reservation system. Employees have many profiles like managers, accountant, drivers, field employee etc. The manager should manage the business in such a way that everyone does their job. Manager manages proper work distributions.

**Add Buses:**

This module should help to add new bus details. Bus details include Bus Number, Model Number, Numbers of seats, Type of bus, the condition of the bus.

**Availability:**

This module should help to search the bus and find availability of seats. The customer can check bus availability anytime. Desired available seats can be booked by the client using this system.

**Enquiry:**

Any question can be made using email id or filling website form. Customer care representatives will reach you with solutions. Any question about bus timing, the system can do seat availability with human interaction.

**Cancel:**

At any point of time before boarding of bus customer has all right to cancel tickets. The money will be credited to a customer account as per bank policy and timing.

**Booking:**

If customer finds the desired bus and available seats. The customer can book the seats using this module. The booking process is entirely computerized. Real time seat availability. Once a place has been locked it can’t be available for booking.

**Payment:**

Payment can be made using a credit card, debit card, internet banking, online wallet like Paytm and cash too. Payment portal is highly secure and trusted.

**Notification and messages:**

This system has a fully automated process of information. Customer will get notifications of their booking, payments, inquiry response. The employee should get notifications about their jobs. Example driver will get the text for bus boarding.

**Facilities:**

**Printouts:**

Details of the case can be printed, and hard copy can be used to distribute.

**PDF File:**

Pdf can be utilized as soft copy.

**Email:**

Every information in the system can send via email.

**Sorting:**

Information can be sorted on the basis of many information.

**Backup:**

Backup is being taken every day.

**Recovery:**

Any failure then backup can be restored.

**SYSTEM DESIGN OF ONLINE BUS BOOKING SYSTEM:**

The system basically needs very simple architecture. This is system are there primary three users i.e. Admin, Client, Employee.

Use cases for Admin of online bus booking system:

Admin is a most famous person of this scheme. Admin is superuser of this Bus Reservation System. Admin needs to log in to system using appropriate credentials. Once admin has logged in the system, admin can do following things.

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Now, the admin has complete access into the system. Admin can add buses, edit, update Bus details. Admin can manage the employee details, their salary, work assignment. Admin has the power to view all booking, see payment made to the system. Admin also administers the client details. Admin has only right to verify the customer profiles.

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**Use cases for Employee of online bus booking system:**

Employees are man power in offices. An employee can register to the system. Admin should get a notification. When admin should verify the employee identity only then the employee should able to access the system.

After successful registration, the employee needs to log in and authentication process does occur. Employee arranges Bus departure. An employee can receive payment from customer in cash or via debit cards/credit cards and confirm their seats.

They can update the Bus information like departure date, time, route etc. They can contact to the client and provide the bus status as well as solve the query related to the customer. They can contact to them using phone or email.

**Use cases for Clients of online bus booking system:**

The client is the end user of the system. Before doing anything, the user needs to register with the system. Admin should verify the customer details. Once the customer is verified. Clients can log in to the system.

Clients can search the availability of seats using check availability modules. If customer finds the seats available for them. They can book the ticket, make payment, and confirm their booking.

Sometimes due to some personal reason client wants of canceling the card. They can cancel the ticket. The client is the end user of the system. Before doing anything, the user needs to register with the system.

Admin should verify the client details. Once the client is verified. Clients can log in to the system. Clients can search the availability of seats using check availability modules. If customer finds the seats available for them.

They can book the ticket, make payment, and confirm their booking. Sometimes due to some personal reason client wants of cancel the ticket. They can cancel the ticket.

**USER INTERFACE (UI) OF ONLINE BUS BOOKING SYSTEM:**

The user interface is very important part of the system. A good and user-friendly interface attracts the user toward it. Whereas a bad one makes the user experience bad and they never return to the system.

**Login Page:**

Admin, client, and employee need to log in using login id and password. The system authenticates every user. The only valid user can access the data.

**Admin Page**:

This page is dedicated to a senior employee of the organisation. This page contains the link to add buses link to employees, link to client’s details. This page also shows to highlighted bookings, ongoing buses, newly added Buses.

**Client Page:**

This page shows the client details. Clients can access recommended buses as per their last searched in this system. Clients can view the case update using this interface. This page should help the customer to check the availability.

**Reservation page:**

This page is used for making the online bus booking system reservation. The customer should have redirected to this page after checking the availability. They need to fill the personal details. After filling the details, payment gateway page should come up. Once payment is done. They should get confirmation on email as well as on screen.

**Employee Page:**

This interface helps the employee to view their work, notification, manage buses update Buses, etc.

Find below more detailed breakdown of the functional requirements:

**User Interface and Experience:**

* **User Registration and Login:**

Allow users to create accounts, log in securely, and manage their profiles.

* **Search and Filter:**

Enable users to search for buses based on origin, destination, date, and time, with filtering options for bus types and amenities.

* **Route and Schedule Display:**

Present available routes, schedules, and bus details clearly and concisely.

* **Seat Selection:**

Allow users to choose their preferred seats on the bus.

* **Passenger Information:**

Collect and store passenger details accurately and securely.

* **Booking Confirmation:**

Provide users with a confirmation of their booking, including ticket details and payment information.

* **User Account Management:**

Allow users to view their booking history, manage their profile, and cancel or modify bookings.

* **Online Compatibility:**

Ensure the software is accessible through online for convenient booking on the go.

**Booking and Payment:**

* **Ticket Reservation:** Allow users to reserve tickets for specific bus routes and schedules.
* **Payment Processing:** Integrate secure payment gateways for online transactions.
* **Payment Options:** Support various payment methods, including credit cards, debit cards, and online wallets.
* **Cancellation and Refund:** Provide a clear process for users to cancel bookings and receive refunds.
* **Promotional Offers:** Implement a system for managing and applying promotional codes and discounts.

**Admin Functionality:**

* **Route and Schedule Management:** Allow administrators to add, edit, and delete bus routes and schedules.
* **Bus Inventory Management:** Track available buses, their capacity, and any maintenance issues.
* **User Management:** Allow administrators to manage user accounts, including creating, editing, and deleting user profiles.
* **Reporting and Analytics:** Provide tools for generating reports on booking trends, revenue, and other key metrics.
* **Customer Support:** Enable administrators to communicate with users, address inquiries, and resolve issues.

Functional requirements are product features or functions that developers must implement to enable users to accomplish their tasks. So, it’s important to make them clear for the stakeholders. Generally, functional requirements describe system behavior under specific conditions.

The developers of this system must enhance the performance and efficiency of the system by adding 15 to 20 more functional requirements. Students need to do their own research to find how they can improve the system and which FRs need to added. The group must need a prior approval from the stakeholders/project supervisor before finalizing these Functional Requirements.

These enhanced FRs must be reflected separately in Final SRS Report after the approval.

**Non Functional Requirements**

There are a lot of software requirements specifications included in the non-functional requirements of the system, which contains various processes, namely Security, Performance, Maintainability, and Reliability.

**Security:**

* Patient Identification: The system needs the patient to recognize herself or himself using the phone.
* Logon ID: Any users who make use of the system need to hold a Logon ID and password.
* Modifications: Any modifications like insert, delete, update, etc. for the database can be synchronized quickly and executed only by the ward administrator.
* Front Desk Staff Rights: The staff at the front desk can view any data in the system, and add new patients record to the HMS but they don't have any rights to alter any data in it.
* Administrator rights: The administrator can view as well as alter any information in the system.
* Cybersecurity Implementation: Identify ethical risks in database design and implement the actions of mitigation.
* Cybersecurity Implementation: Provide evidence that you have implemented the data encryption and anonymization of data.
* Cybersecurity Implementation: Perform ‘Data Protection Impact assessment’ to help ensure compliance, facilitate a privacy by-design approach and identify better practice.
* Cybersecurity Implementation: Implement the secure methods for data encryption, data security and data breach to maintain the privacy of end users.

**Performance:**

* Response Time: The system provides acknowledgment in just one second once the 'patient's information is checked.
* Capacity: The system needs to support at least 1000 people at once.
* User-Interface: The user interface acknowledges within five seconds.
* Conformity: The system needs to ensure that the guidelines of the Microsoft accessibilities are followed.

**Maintainability:**

* Back-Up: The system offers efficiency for data backup.
* Errors: The system will track every mistake as well as keep a log of it.

**Reliability:**

* Availability: The system is available all the time.

Project should aim at Business process automation.

* + In computer system the person has to fill the various forms & number of copies of the forms should be easily generated at a time.
  + In computer system, it is not necessary to create the manifest but we can directly print it, which saves time.
  + To assist the staff in capturing the effort spent on their respective working areas.
  + To utilize resources in an efficient manner by increasing their productivity through automation.
* The system should generate types of information that can be used for various purposes.
* It satisfy the user requirement
* Be easy to understand by the user and operator
* Be easy to operate
* Have a good user interface
* Be expandable
* Delivered on schedule within the budget.

**Hardware Requirement: Should be recommended by the developers.**

**Software Requirement: Should be recommended by the developers.**