ANJUMAN INSTITUTE OF TECHNOLOGY AND MANAGEMENT, BHATKAL

(Affiliated to Visvesvaraya Technological University, Belagavi)

A project report on

DATABASE MANAGMENT SYSTEM

(BCS403)

Submitted By

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BONAFIDE CERTIFICATE

This is to certify that the work entitled **"DATABASE MANAGMENT SYSTEM(BCS403)"** is carried out by **SHOBHA NAIK (2AB23CS068)** during the year **2024-2025**. It is certified that all corrections & suggestions indicated for internal assessment have been incorporated in the report & deposited in the departmental library. The report has been approved as it satisfies the academic requirements.

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TRAIN TICKET RESERVATION SYSTEM

PROJECT REPORT

Introduction :

The Train Ticket Reservation System is a web-based application developed to simplify and digitize the process of booking train tickets. This system is built using **HTML** and **CSS** for the front-end interface, providing a user-friendly and responsive design. The back-end is developed in **Python**, handling business logic and server-side operations. To store and manage ticket booking data, **MongoDB, a NoSQL database**, is used for its flexibility and scalability. The project is developed using **Visual Studio Code (VS Code)** as the code editor. This system allows users to book, view, and manage train tickets efficiently, reducing manual effort and improving reliability.

Objective :

- To design a user-friendly web interface for train ticket booking using HTML and CSS.
- To implement the back-end logic using Python for processing ticket bookings and cancellations.
- To establish a secure and efficient connection with a MongoDB database to store user and booking information.

To enable users to search, book, view, and cancel train tickets online.

- To reduce the manual work involved in traditional ticket booking systems.
- To ensure fast, reliable, and real-time updates of train ticket data.

Technologies Used :

Software Requirements:

Frontend : HTML, CSS, JavaScript

Backend : Python (Flask/Django) or PHP

Database : MongoDB

Hardware Requirements:

Processor: Intel i3 or

higher RAM: 4GB or higher

Hard Disk: 100 GB or

higher

Scope of the Project :

This system handles:

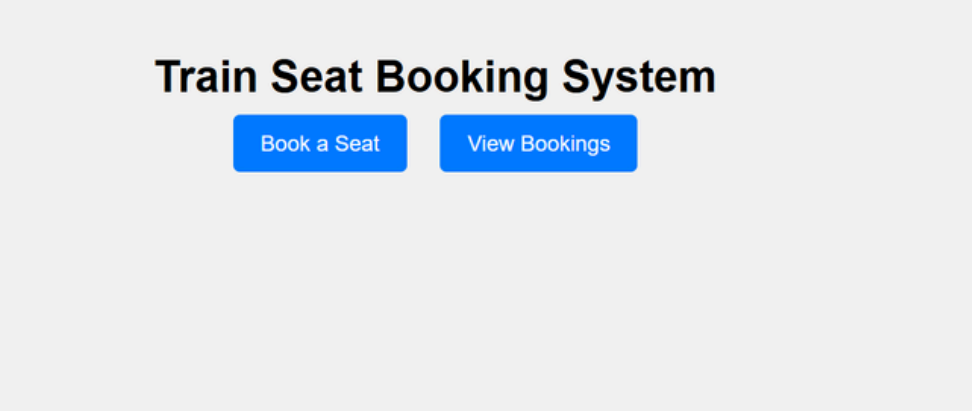
- The system allows users to register/login and manage their accounts securely.
- Users can search for available trains based on source, destination, and date.
- The system supports online ticket booking and generates a confirmation.
- Users can view booked tickets and check booking status.
- The system provides the ability to cancel booked tickets if needed.
- Admin functionality can be included to manage trains, schedules, and monitor bookings.
- The application ensures data is stored and retrieved efficiently using MongoDB.

Modules of the System :

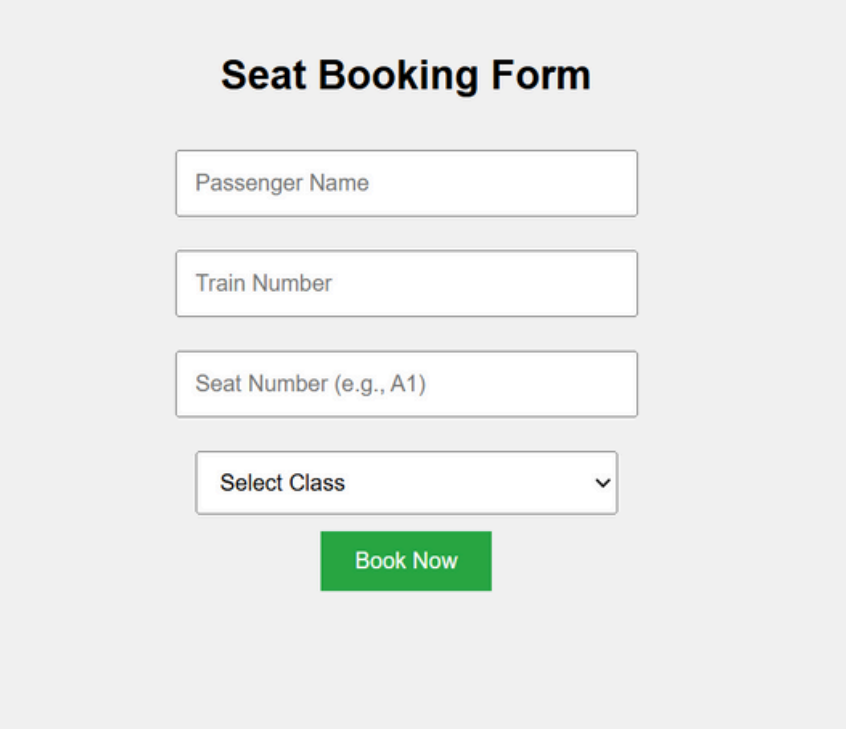
1.SEAT BOOKING:-

Description:

The Train Seat Booking System is a software application designed to automate and simplify the process of booking train tickets. This system allows users to search for trains, view seat availability in real-time, select their preferred train and class, reserve seats, and make online payments. It provides a digital platform for passengers to perform end-to-end train reservations without the need to visit railway stations physically.



2.Seat Booking Form:



- Allows users to enter details such as passenger name, train number, seat number.
- Allows users to select class and coach (e.g., Sleeper, 3AC).
- Users choose available seats from layout or list.
- Prevents double-booking with locking mechanism.
- Updates seat status after confirmation

3: View Bookings:

Key Points:

1. Displays all train ticket bookings in a structured table format.
2. Shows details like passenger name, train number, seat number and class.
3. Data is fetched from the **MongoDB database** and rendered on the webpage.
4. Helps users/admin to view and verify all booking entries easily.
5. Designed using **HTML, CSS, and Python (backend)** for dynamic content display.

Booked Seats

Name	Train No	Seat No	Class
teja	245	8	AC
Shobha Vasant Naik	234	8	AC
keertana	250	4	Sleeper
khushi	258	3	First Class
tanvi	240	1	Sleeper

4: Database Management (MongoDB)

Key Points:

1. Stores all booking data as documents in **MongoDB**, a NoSQL database.

2. Each entry includes fields like name, train number, seat number and class

3. Uses unique _id (ObjectId) for every record to ensure data integrity.

4. Allows **CRUD operations** (Create, Read, Update, Delete) through MongoDB tools or backend code.

5. Enables fast and flexible data access for both frontend and backend modules.

```
_id: ObjectId('6841b80e0bfd7d18165ac5b4')
name : "teja"
train_no : "245"
seat_no : "8"
class_type : "AC"
```

```
_id: ObjectId('684505de52753c0ef05fd8e7')
name : "Shobha Vasant Naik"
train_no : "234"
seat_no : "8"
class_type : "AC"
```

```
_id: ObjectId('6845060752753c0ef05fd8e8')
name : "keertana"
train_no : "250"
seat_no : "4"
class_type : "Sleeper"
```


Conclusion:

The Train Ticket Reservation System is a user-friendly web application that simplifies the process of booking train tickets. It allows users to book, view, and manage their travel details efficiently. The project uses HTML and CSS for the frontend and Python for backend logic. MongoDB is used for storing passenger and booking information securely. The system ensures a smooth interaction between the user interface and the database. It enhances understanding of full-stack development and database connectivity. Through this project, we implemented real-time data handling. It provides a good foundation for future enhancements like payment integration or user login. Overall, the system is efficient, responsive, and reliable for basic ticket reservation tasks.

AI Tools Used:

1. **ChatGPT (OpenAI)** – Used for:
   - o Generating project documentation. o Writing structured reports and descriptions.
   - o Getting technical guidance for frontend/backend code.
2. **GitHub Copilot (if used)** – (Optional: include if applicable)
   - o Helped in code auto-completion and suggesting logic in VS Code.
3. **MongoDB Compass** – For visualizing, managing, and testing the data stored in MongoDB.
4. **VS Code Extensions (Python, HTML, CSS tools)** – For faster and more intelligent coding with syntax support and live preview.