BUS & TRAIN RESERVATION SYSTEM

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ABSTRACT

The Bus and Train Reservation System is a simple console-based application developed in the C programming language. The main objective of this project is to provide an easy and efficient way to book seats for bus and train travel. The system allows users to choose between bus and train services, enter passenger details, and reserve available seats. Each reservation stores essential information such as passenger name, age, gender, and seat number.

OBJECTIVE

The main objective of the Bus and Train Reservation System is to provide a simple, user-friendly application that allows passengers to book seats efficiently for bus and train travel. The project aims to automate the basic reservation process by collecting passenger details, assigning seat numbers, and displaying booking information in an organized manner. It demonstrates key concepts of C programming such as structures, functions, arrays, and menu-driven interaction. The system is designed to help students understand data handling, modular programming, and logical decision-making while creating a useful real-life application.

PROBLEM STATEMENT

The manual process of booking bus and train tickets is time-consuming, error-prone, and inefficient. Passengers often face difficulties such as unavailability of real-time seat status, lack of proper record keeping, and delays in ticket confirmation. To overcome these challenges, there is a need for a simple, computer-based reservation system

ALGORITHM

Step 1: Start the program.

Step 2: Initialize variables:

- Set bus_seat = 1
- Set train_seat = 1
- Create an empty array reservation[] to store passenger details.

Step 3: Display the Main Menu:

1. Book Bus Ticket
2. Book Train Ticket
3. Show All Reservations
4. Exit

Step 4: Readthe user's choice

If user selects option 1: Book Bus Ticket

Step 5: Ask user to enter:

- Name
- Age
- Gender

Step 6: Assign the current bus_seat number.

Step 7: Store the details in the reservation array.

Step 8: Increase bus_seat by 1.

Step 9: Display "Bus Ticket Booked Successfully".

Step 10: Go back to Main Menu.

If user selects option 2: Book Train Ticket

Step 11: Ask user to enter:

- Name
- Age
- Gender

Step 12: Assign the currenttrain_seat number.

Step 13: Store the details in the reservationarray.

Step 14: Increase train_seat by 1.

Step 15: Display "Train Ticket Booked Successfully".

Step 16: Return to Main menu

If user selects option 3: Show All Reservations

Step 17: Display all stored passenger details:

- Name
- Age
- Gender
- Seat number
- Type (Bus / Train)

Step 18: Return to Main Menu.

If user selects option 4: Exit

Step 19: Display "Program Terminated".

Step 20: Stop the program.

KEY FEATURED USED:

1. **Structure (struct)**

Used to store passenger details such as name, age, gender, seat number, and travel type (Bus/Train).
This helps keep related data together in a single unit.

2. **Functions**

Separate functions are used for:

- Bus Booking
- Train Booking
- Displaying Reservations

This makes the program modular and easy to understand.

3. **Arrays**

An array of structures is used to store multiple reservation records.

4. **Menu-Driven Program**

A simple interactive menu:

- Book Bus
- Book Train
- Show Reservations
- Exit

Allows users to choose any operation easily.

5. **Conditional Statements (if–else / switch)**

Used to handle user choices and perform correct functions based on input.

6. **Loops**

A loop runs the menu continuously until the user selects **Exit**.

7. String Handling

Functions like scanf(), strcpy() etc. are used to handle passenger names and travel types.

8. Seat Number Auto-Generation

Seat numbers for Bus and Train are automatically assigned and incremented without user input.

CONCLUSION

The Bus and Train Reservation System successfully provide a simple, efficient, and user-friendly way to book travel tickets. It allows users to check available services, enter personal details, and confirm reservations with ease. The project demonstrates how C programming can be used to solve real-life problems through the use of functions, structures, loops, and conditional statements.