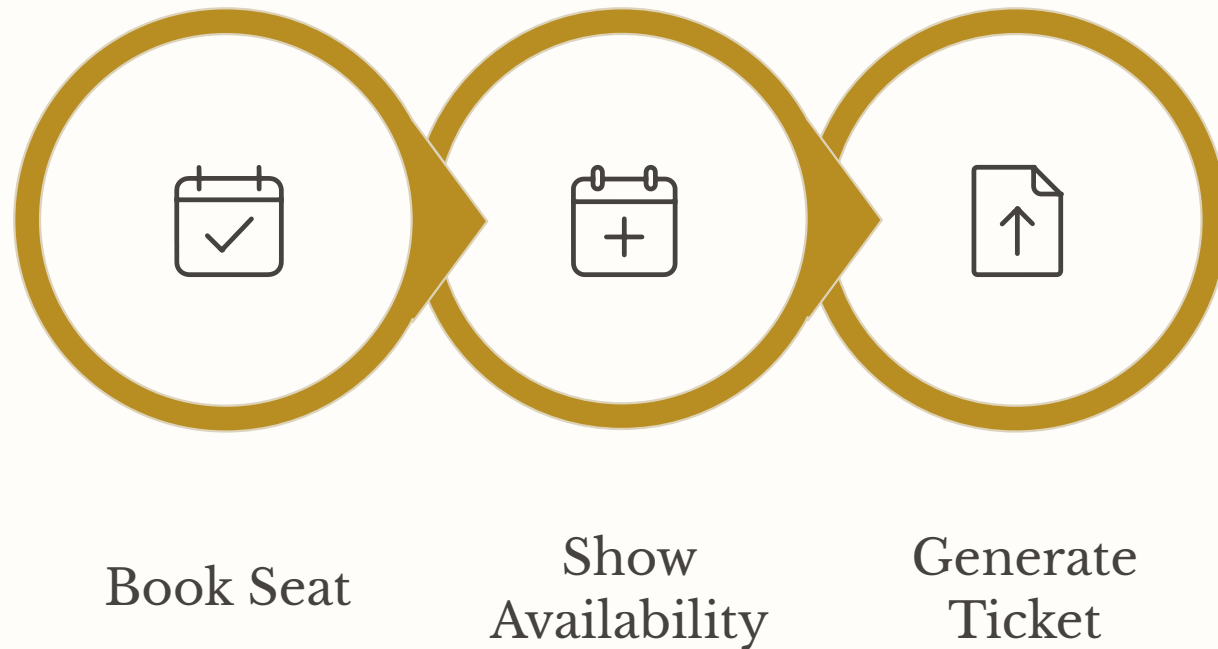# University Bus Reservation System

Developed by: Saravana Priyan S (Reg. No: 43110831)

Department: Computer Science and Engineering

Institution: Sathyabama Institute of Science and Technology

Made with GAMMA

Abstract

The University Bus Reservation System is a web-based application designed to simplify and digitalize the process of booking bus seats for students and staff. It allows users to book seats online, view department-wise bus timings, and generate digital tickets in PDF or CSV format. The system aims to reduce manual work, eliminate booking conflicts, and make transportation management efficient and user-friendly.

Book Seat

Show
Availability

Generate
Ticket

Existing System

The current system relies on manual and paper–based processes, leading to inefficiencies and confusion.

→ Manual and paper-based booking process.

→ Students must visit the transport office to book seats.

→ Seat availability is unclear, causing confusion.

→ Manual data entry and report generation.

Proposed System

The new system introduces a digital, interactive solution for bus seat booking.

Interactive web application for bus seat booking.	Real-time seat availability visualization.	Department-wise automatic timing display.
Supports CSV and PDF ticket exports.	Option to clear and view bookings easily.	Database Integrated to view Bookings.

Advantages

Easy to use and visually appealing interface.

Reduces manual errors and paperwork.

Provides instant booking confirmation.

Saves time and resources.

Enables digital record keeping.

Database Integrated

Disadvantages

Since the current version is browser-based, there are a few limitations regarding data persistence.

Requires a MYSQL for DataBase.	Cannot be accessed offline.	Security and Authentication to be improved.

Hardware Requirements

- Processor: Intel i3 or above
- RAM: Minimum 4 GB
- Storage: 100 MB (browser cache)
- Display: 1366 × 768 or higher

Software Requirements

- OS: Windows / macOS / Linux
- Browser: Chrome / Edge / Firefox (latest)
- Front-End: HTML5, CSS3, Tailwind CSS, JavaScript
- Libraries: SweetAlert2, jsPDF, FileSaver.js
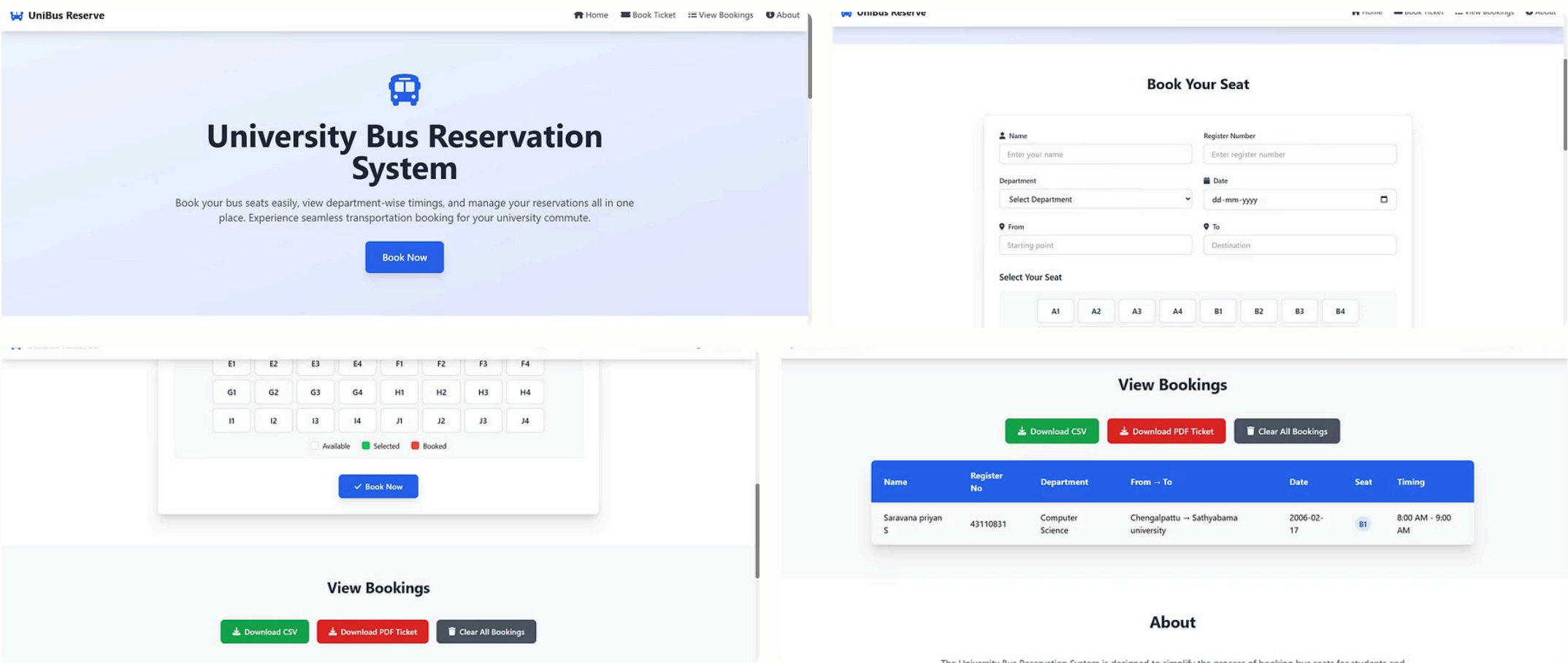
System Modules

Modules

1. Home Module
2. Booking Module
3. Timing Module
4. Booking Management Module
5. About Module

Module Description

- **Home Module:** Displays overview and navigation.

- **Booking Module:** Collects user details and manages seat selection.

- **Timing Module:** Shows department-wise timing dynamically.

- **Booking Management Module:** Displays bookings, exports files, clears data.

- **About Module:** Provides system purpose and credits.

Sample Output (Screenshots)

Visual representation of the key screens in the University Bus Reservation System.

Conclusion

The University Bus Reservation System enhances campus transport booking by providing a digital platform for students and staff. It ensures a smooth, quick, and transparent booking experience while reducing manual workload.

▢ Future Enhancements

Future enhancements include adding **user authentication, admin dashboard, and online deployment** for cloud-based access.