# Bus Booking management system.

To create a comprehensive bus booking management system, you'll need to cover several aspects including the home page design, backend architecture, front end development and important intellectual property (IP) and privacy considerations.

## front end (user interface)

### Home Page:-

- Header:-
  - Navigation Bar: Links to "Home", "Book a Ticket", "My Booking", Contacts, "Login/Register".
  - Search Bar: Allows users to search buses by destination, date and bus type.
- main Section:-
  - Banner: Display promotional offers or images.
  - Search form: fields for:
    - source city
    - Destination city
    - Date of journey
    - No of passengers
    - Bus type (Eg:- AC, Non-AC, Sleeper)
  - featured Routes: showcase popular destinations or routes.
- footer:-
  - contact information. Phone number, email, and address.
  - social media links: Links to company's social media profiles.
  - quick links: To "Terms of service", "privacy policy", etc.

Additional Pages:-

* Booking page:-
  - -) List of available buses based on user search
  - -) filters for time, bus type, price, etc.
  - -) Seat selection, interface.
  - -) Summary of booking and payment options

My Booking Page:-

- -) Display user's booking history
- -) Options to view, download, or cancel bookings.

Login / Register Page:-

- -) User authentication from (login, registration).
- -) Option for social media login (eg:- google, facebook).

Contact us Page :-

- -) Contact from for customer inquiries
- -) Details like company address, Phone number, and support email.

Back End (Server-side Logic)

- -) Languages Java, Python, Nodes, js. etc.
- -) Frame works
  - Java : Spring Boot
  - Python : Django
  - Nodes.js : Express.js
- -) Database : My SQL, Postgre SQL, or MongoDB
- -) Authentication : JWT (JSON Web Token) or OAuth 2.0 for user sessions.

=) Payment integration : stripe , Paypal , etc.

## Core functionalities:-

=) User management:

- User registration and login.
- Profile management and password encryption.

=) Bus management:

- CRUD operations for buses (Create , Read , Update , Delete).
- Schedule management (departure / arrival times).

=) Booking management:-

- Search for buses
- Seat selection and booking
- Payment processing and booking confirmation
- notification via email or sms.

=) Admin Dashboard:

- manage buses , routes , and bookings
- view revenue reports
- user and support management.

## RESTful APIs:-

=) '/api/buses' - Retrieve available buses, filter by date/destination.

=) '/api/booking' - manage bookings (create , view , cancel).

=) '/api/users' - user registration , login and profile updates.

=) '/api/payments' - handle payments and confirmations.

=) Third-Party integration:-

- payment gateway APIs (eg stripe).
- SMS/email notification services.

## Frontend Development:-

=) Tech stack: HTML , CSS , JavaScript.

=) Frameworks / Libraries : React js, Angular, or vue.js for dynamic content

=) Responsive design : Ensure the interface works on all devices.

=) AJAX : for asynchronous data loading without refreshing the page.

=) Client-side validation for forms to prevent user errors.

## Back end development:

=) Server setup use Spring Boot, Django or express js to handle server-side logic

=) Database integration connect to My SQL Postgre SQL, or mongoDB for data storage.

=) Business logic implementation for user management, bus scheduling and booking processes.

=) API security secure end points using JWT / OAuth 2.0.

=) Payment integration connect with stripe, Paypal for handling payments.

=) Error Handling implement robust error handling and logging.

## Testing & Deployment :

=) Unit Testing Junit for Java, pytest for Python, mocha for nodes.js.

=) Integration testing ensure all system components work together.

CI / CD Pipeling

=) Automate testing and development using jenkins, Github Actions, etc.

=) Frontend testing use tools like Jest or Selenium.

-) Deployment use cloud services like AWS, Heroku, or containerize with Docker.

-) security implement SSL | TLS for secure communication.

## Data protection :-

-) compliance adhere to data protection laws such as GDPR or CCPA.

-) Encryption use encryption for sensitive data in transit (HTTPS) and at rest (database encryption).

## user consent :-

-) Privacy policy clearly outline how data will be collected used, and stored.

-) user agreement include a user agreement for consent to data processing.

## Security measures :-

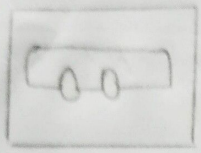
-) Input validation protect against SQL injection, XSS, and other vulnerabilities.

-) Regular updates keep software up to date to address security patches.

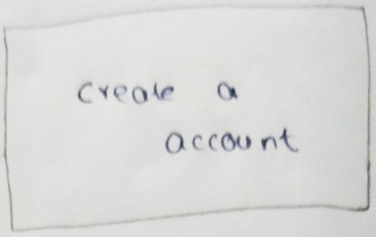
## Ownership and Licensing :-

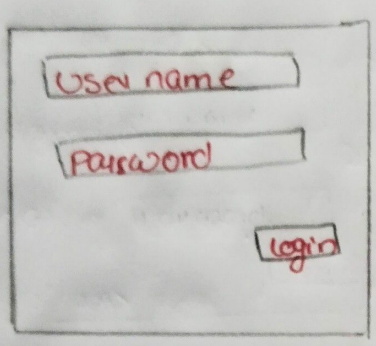
-) source code ownership clearly define who owns the source code

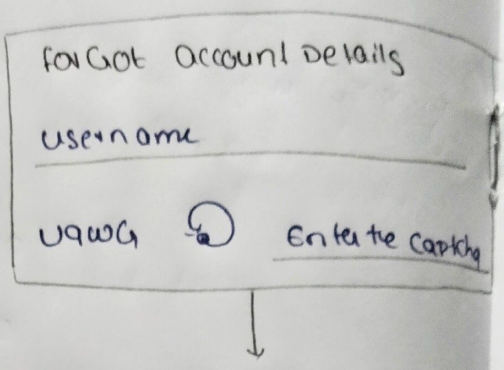
-) third-party licenses ensure proper licensing for any third-party libraries or tools used.

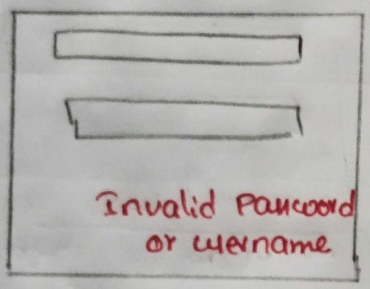


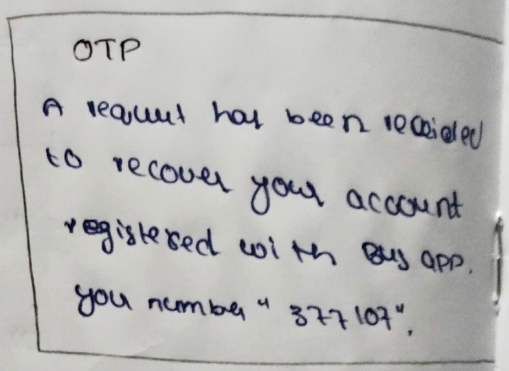
Bus APP

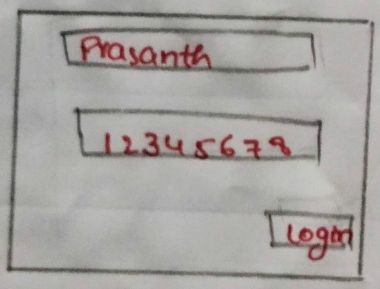


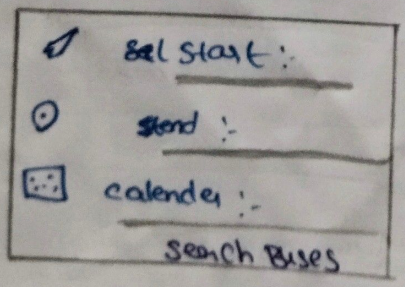




Login succesfully




fill details from
starting to destination

Select buses.

APSRTC

SVEDT Travels

10:30 ... 2:30 ₹905

Sri venkatesWara manr travels

23:00 ... 6:00 900

SKS Logistic

8:00 ... 23:59 ₹670

Sri krishna Travels

23:00 ... 4:00 ₹500

Shama Sandar Travels HPm

22:30 ... 400

₹799

AC | Normal | Seat | Sleeper

Sleeper → Sleeper with type of buses.

Shama Sandar Travels HPm

20:30 ..... 05:00

₹999

Select one bus with Acc.

Lower Upper. Seat selection

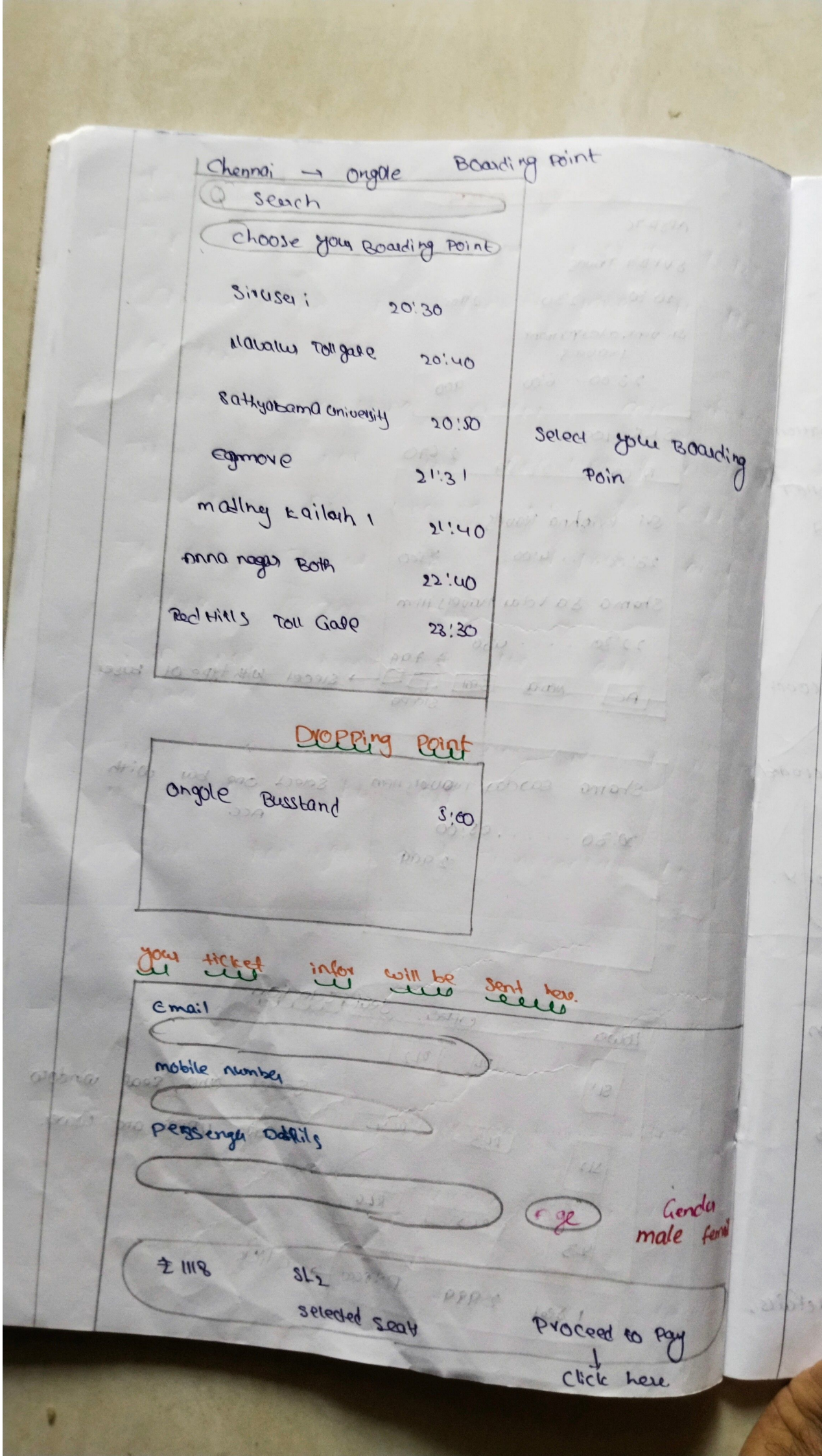
SL1 RL1 RL2

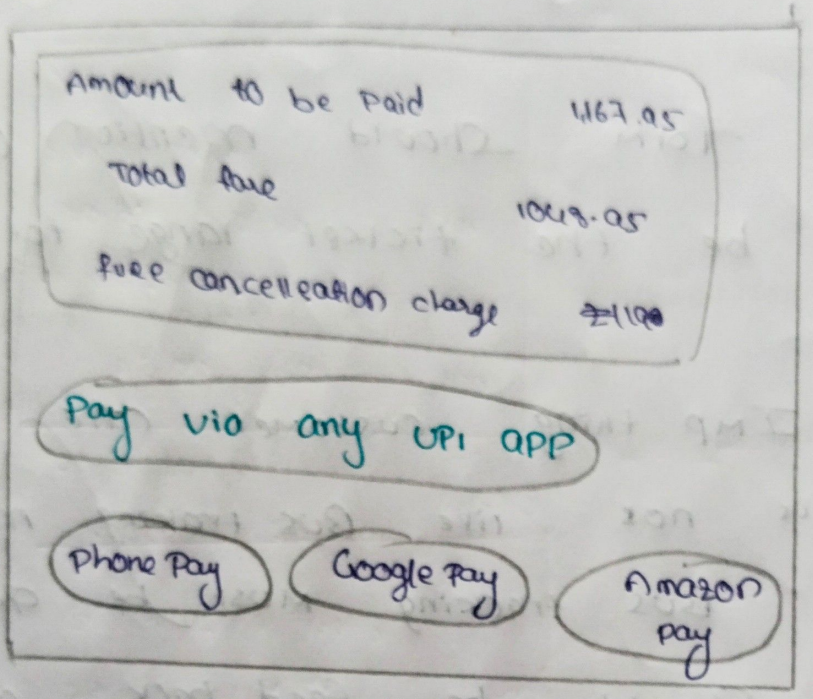
SL2 RL3 RL4

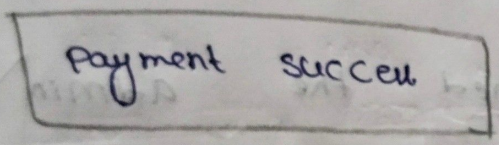
SL3 RL5 RL6

Select one seat window Seat. Upper and Lower.

1 Seat ₹999 Proceed → click


Chennai → Ongole
Boarding Point
Search
Choose your Boarding Point
Sirusei 20:30
Navalur Tollgate 20:40
Sathyabama University 20:50
Egmore 21:31
Maduravoyal 21:40
Anna nagar Both 22:40
Red Hills Toll Gate 23:30
Select your Boarding Poin
Dropping Point
Ongole Busstand 5:00
your ticket infor will be sent here.
Email
mobile number
Passenger Details
Age
Gender
male female
₹ 1118
SL2
selected seat
Proceed to Pay
Click here




## Seat conformation