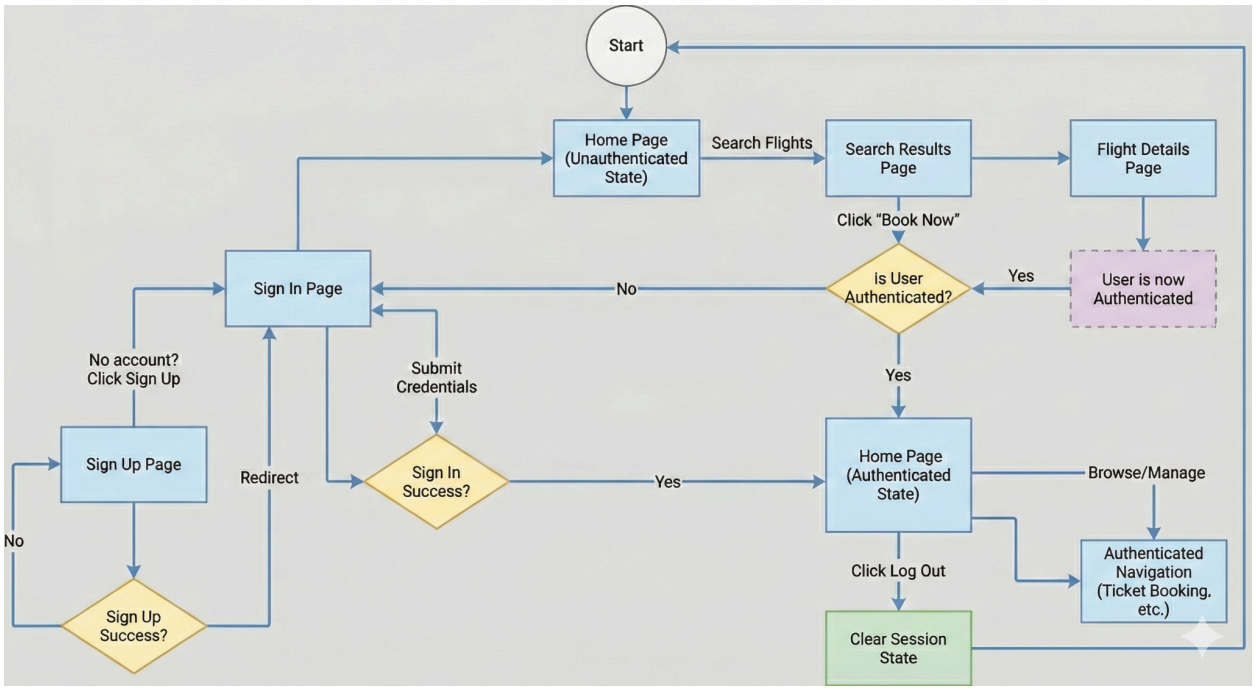
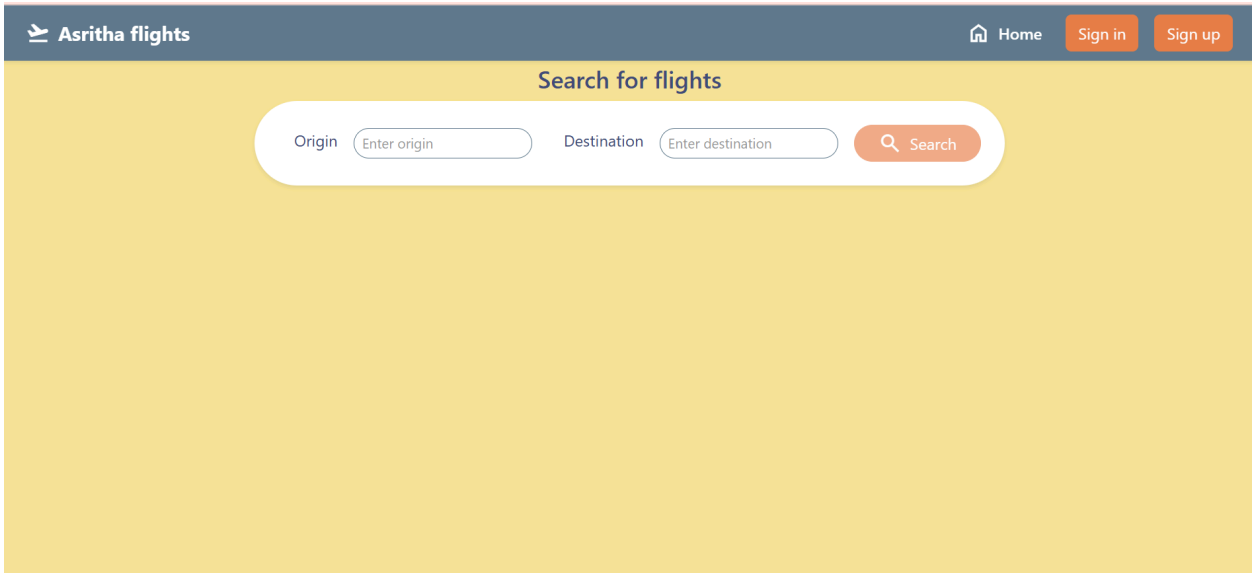
Flow diagram:

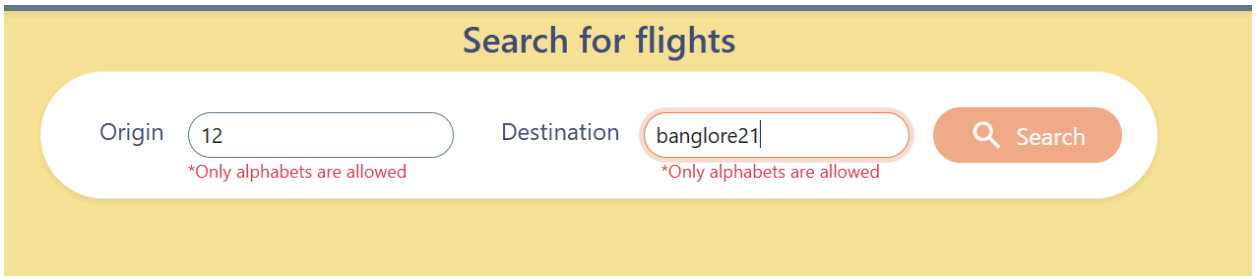


Home Page:



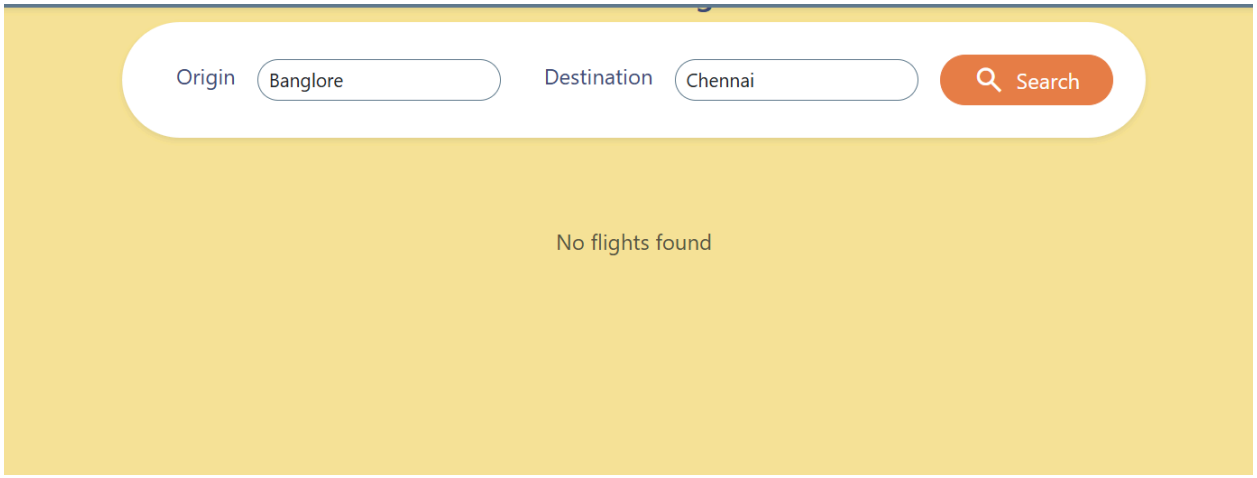
Validation for search form:

Search button disabled until form is valid

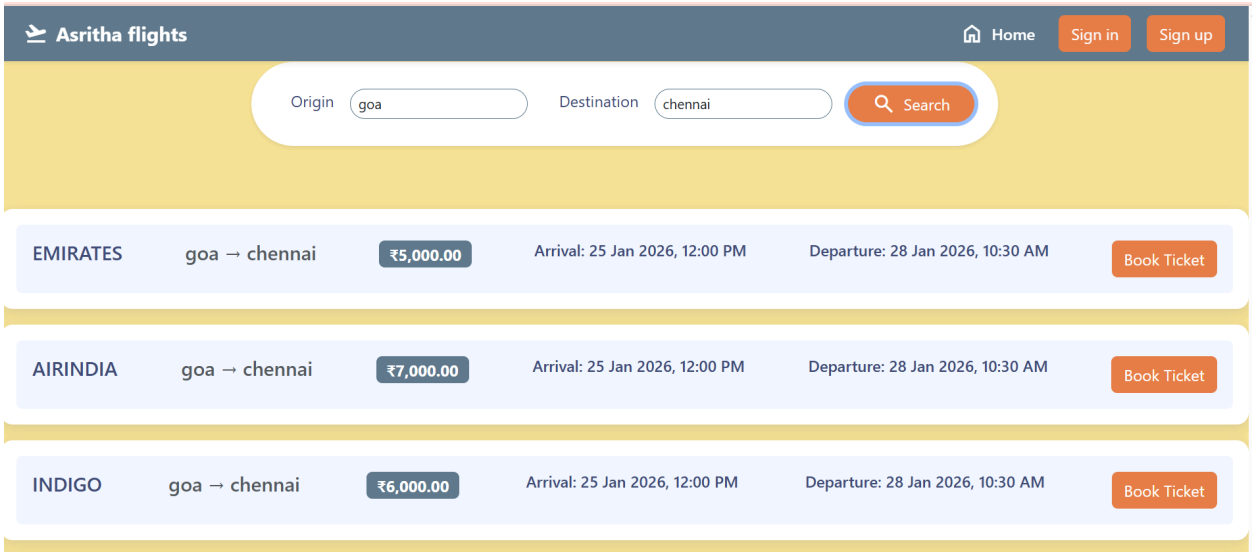


Searching Flights:

If no flights found:



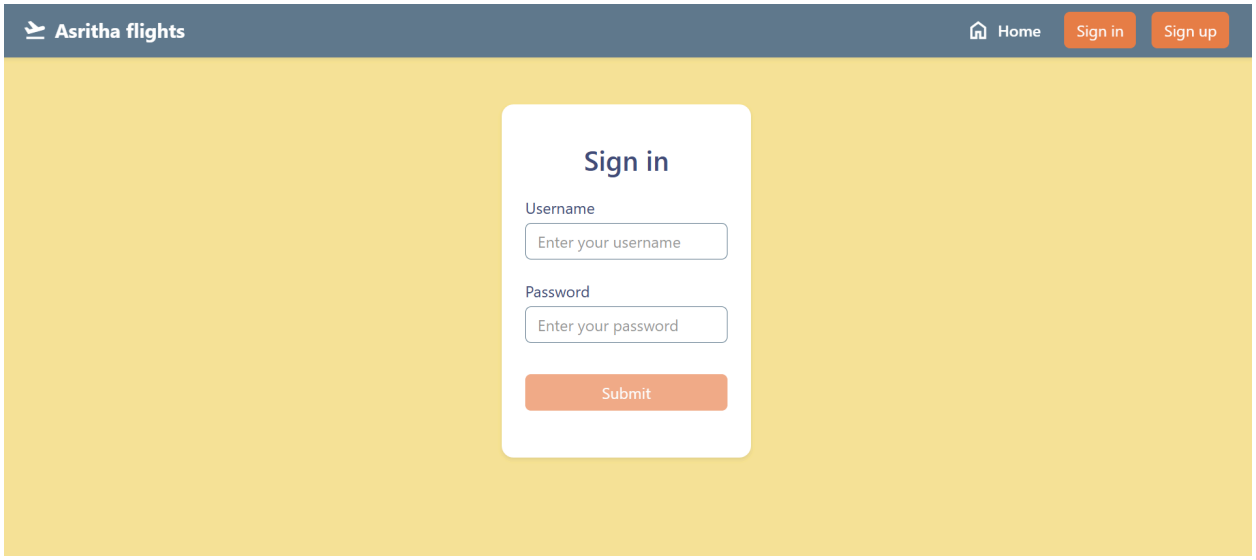
If flights found:



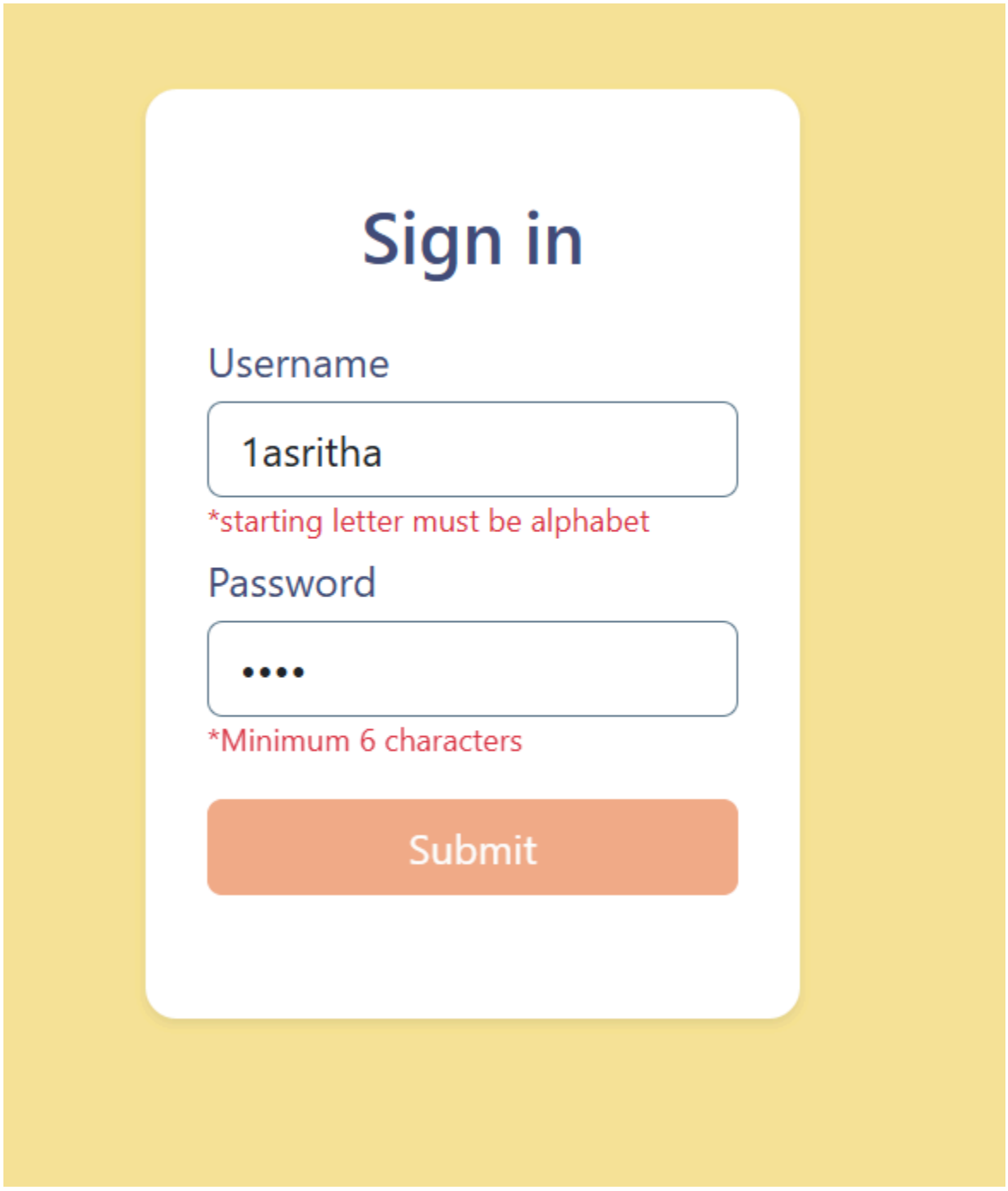
Book Ticket button:

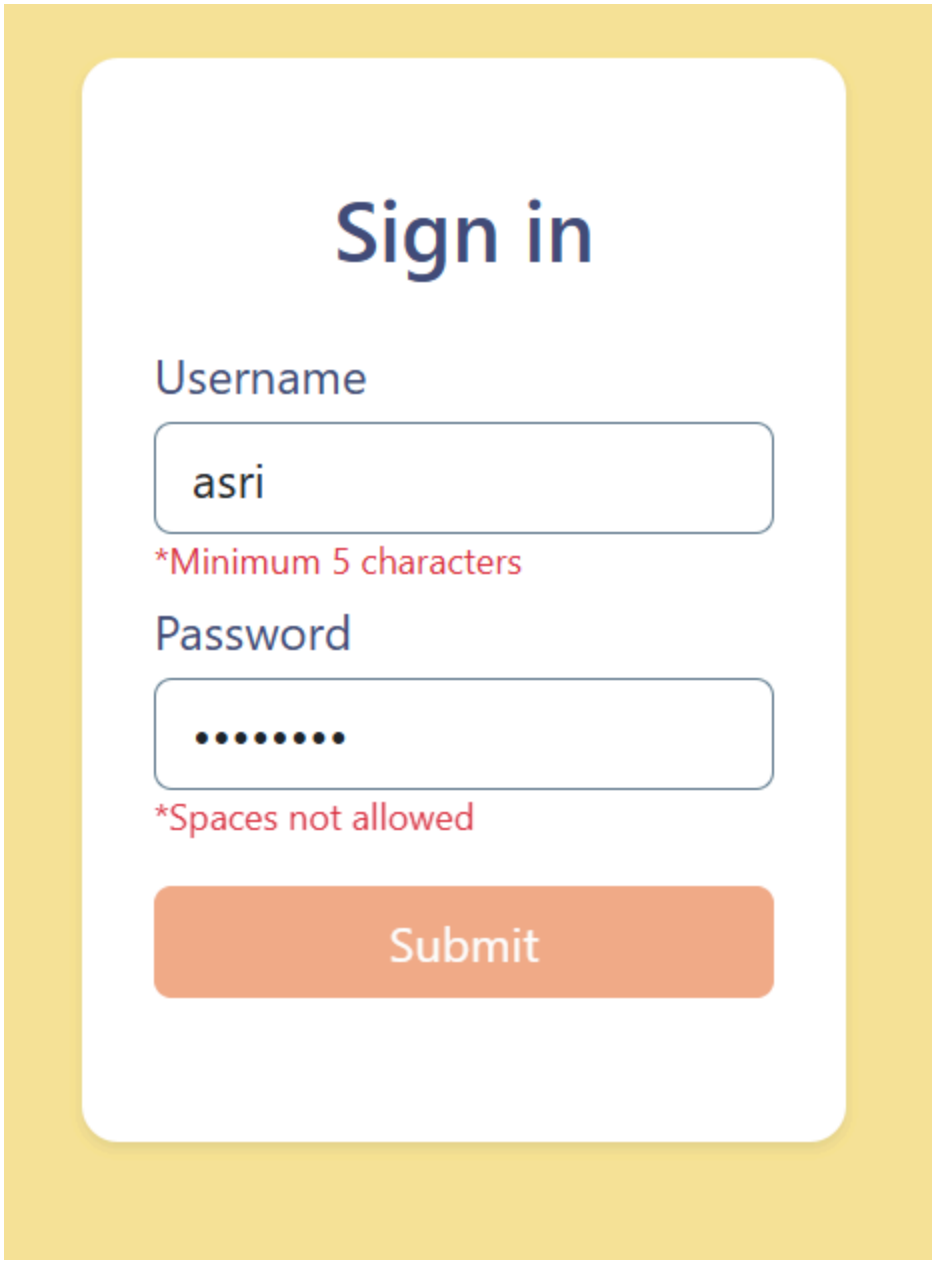
Redirects to sign in page when clicked and not signed in

Sign in page:

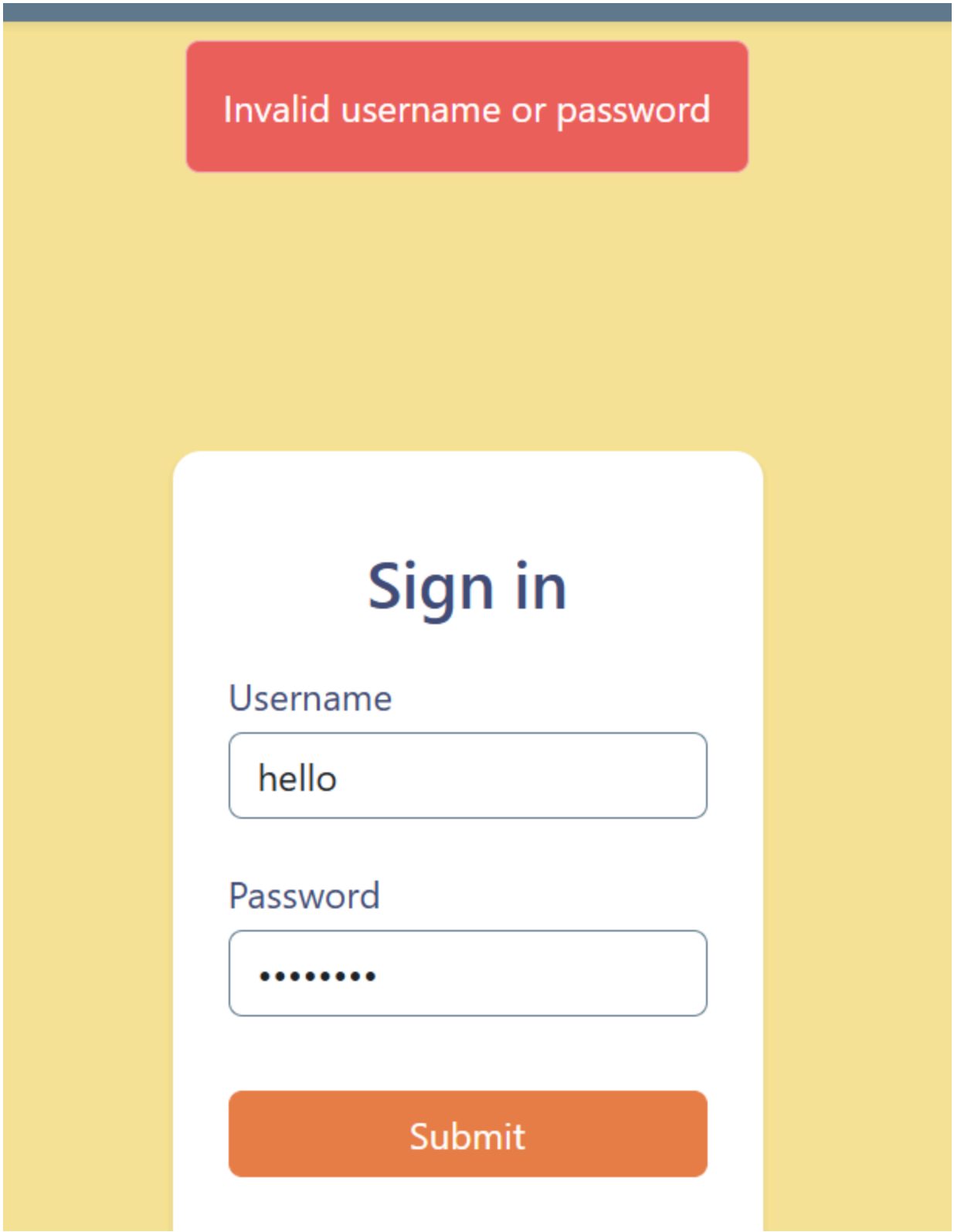

Asritha flights
Home
Sign in
Sign up
Sign in
Username
Enter your username
Password
Enter your password
Submit

Validations:

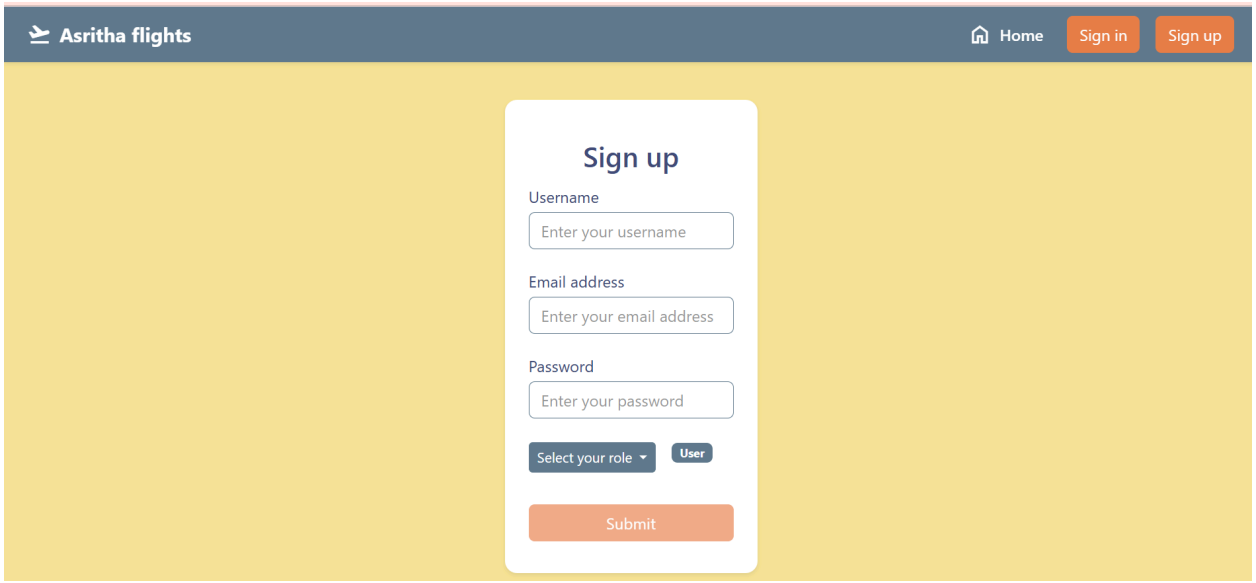




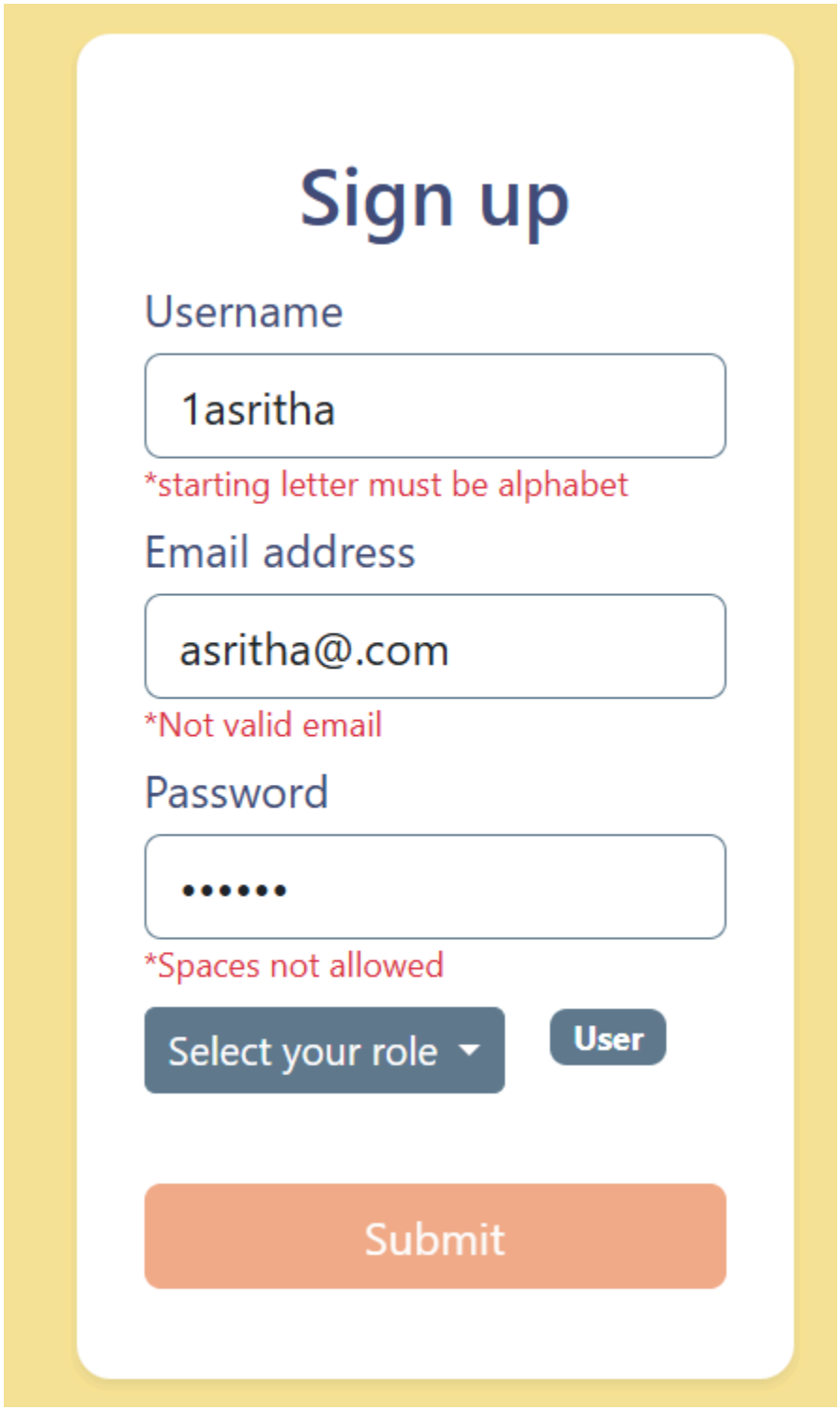
If wrong username or password:


Invalid username or password
Sign in
Username
hello
Password
Submit

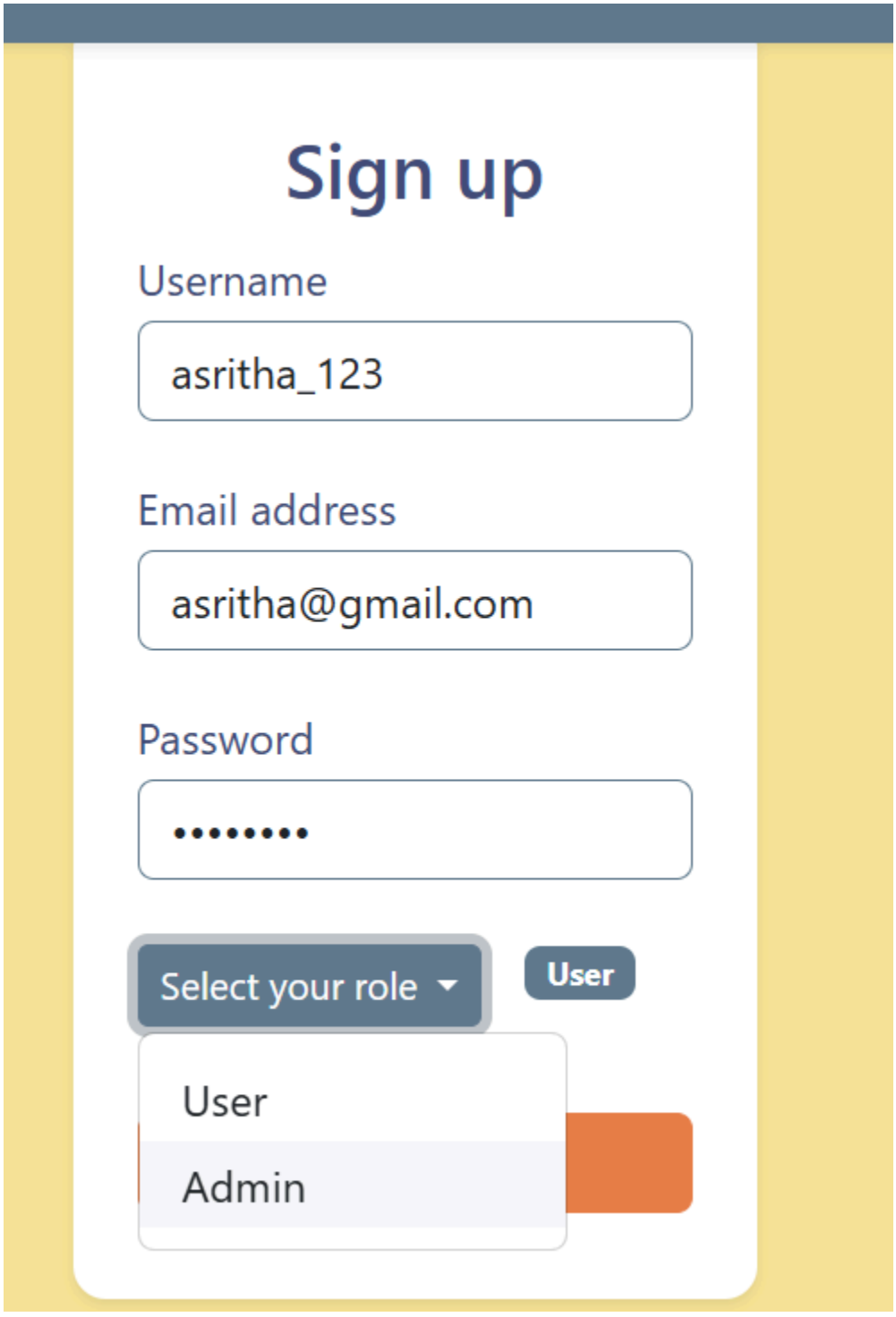
Sign up page:

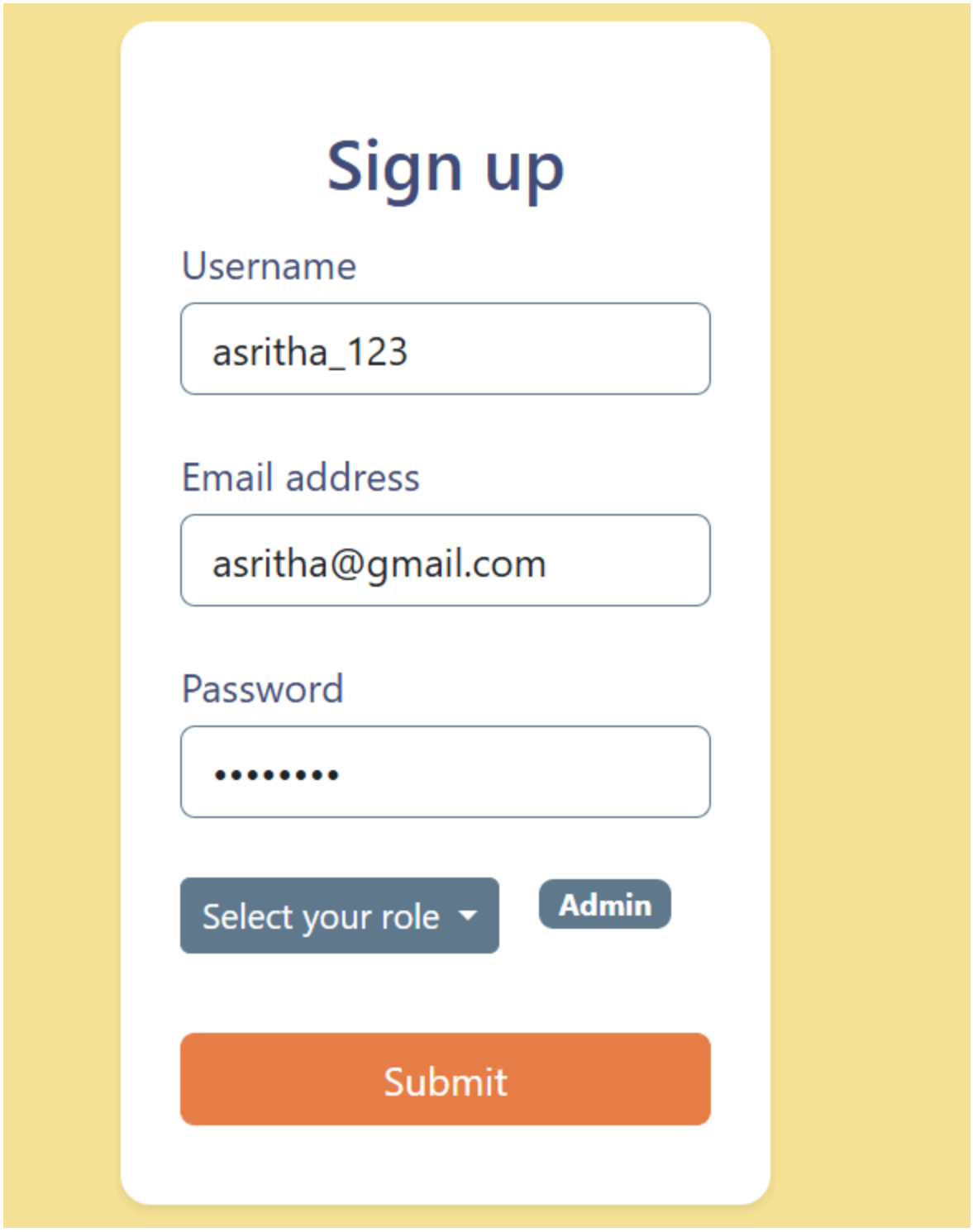

Asritha flights
Home
Sign in
Sign up
Sign up
Username
Enter your username
Email address
Enter your email address
Password
Enter your password
Select your role
User
Submit

Validations handled:

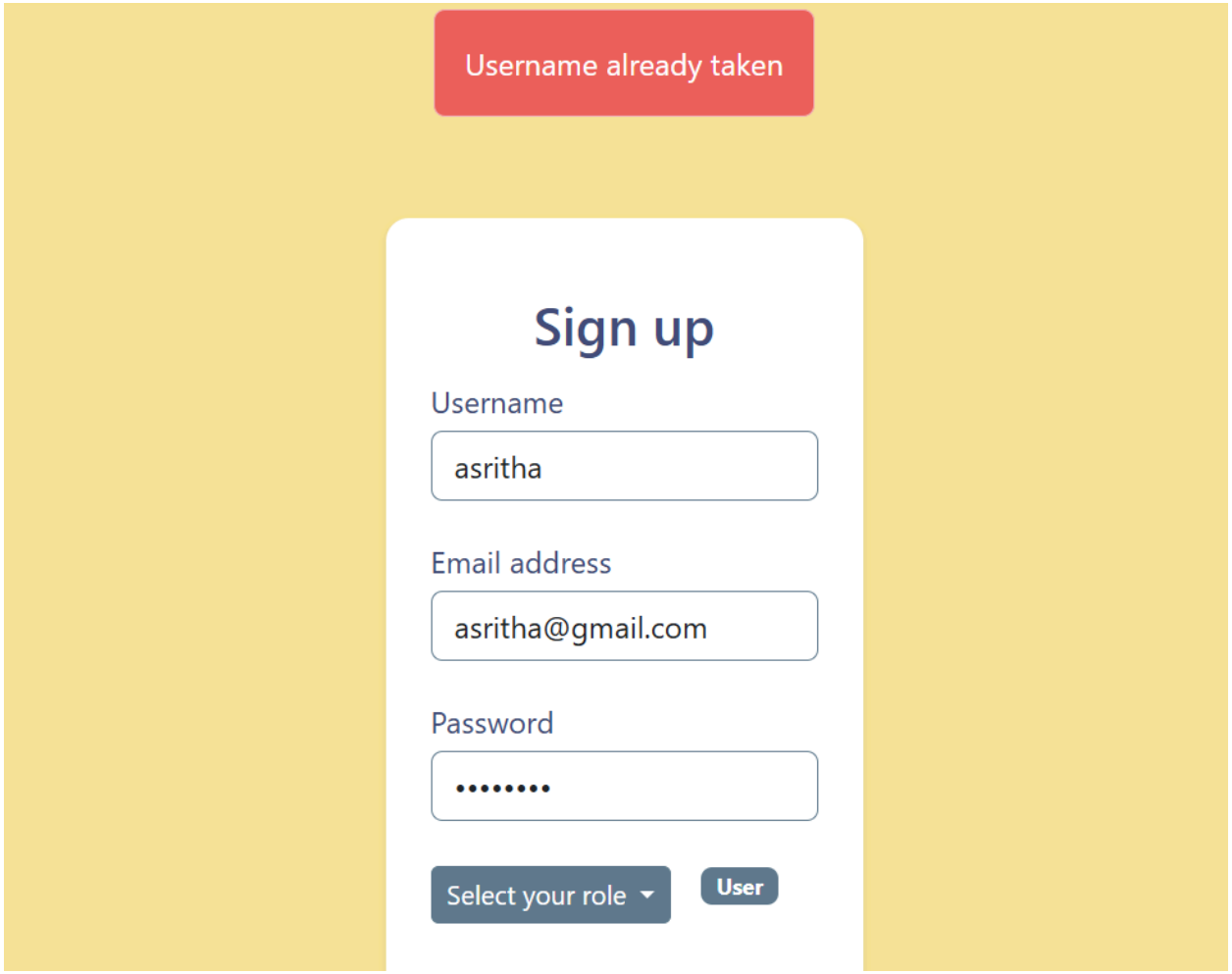


Selection of roles in drop down button:

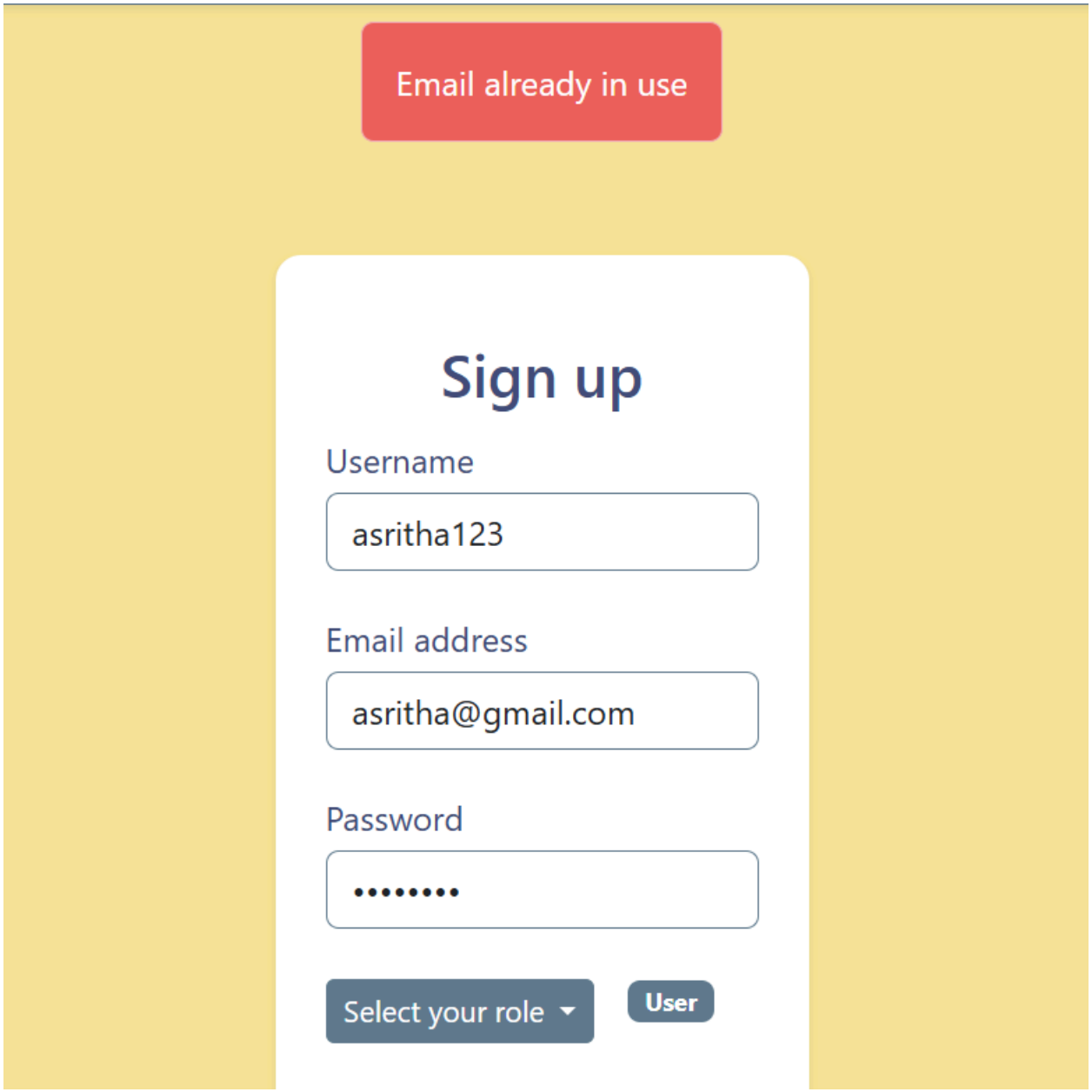



Sign up
Username
asritha_123
Email address
asritha@gmail.com
Password
••••••••
Select your role
Admin
Submit

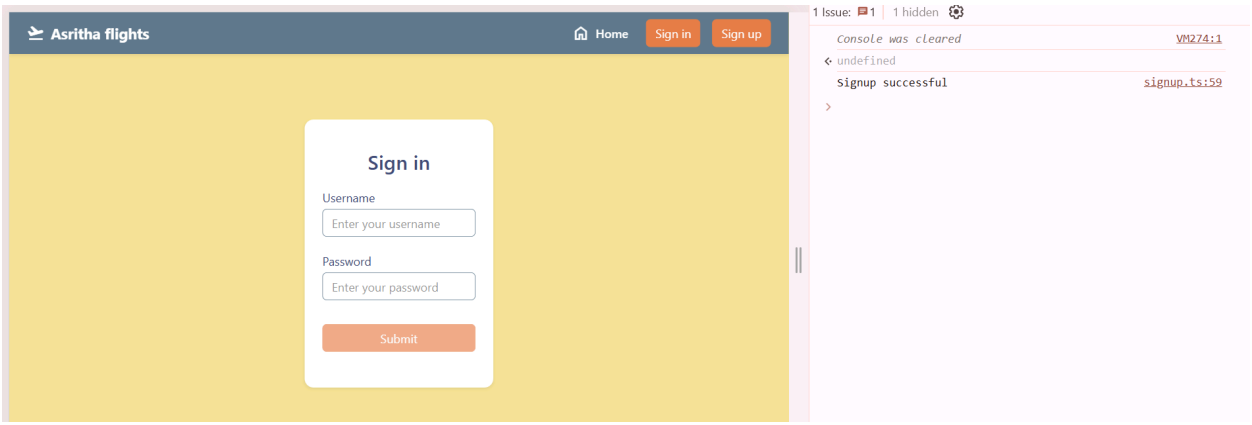
Showing if user name already exists:



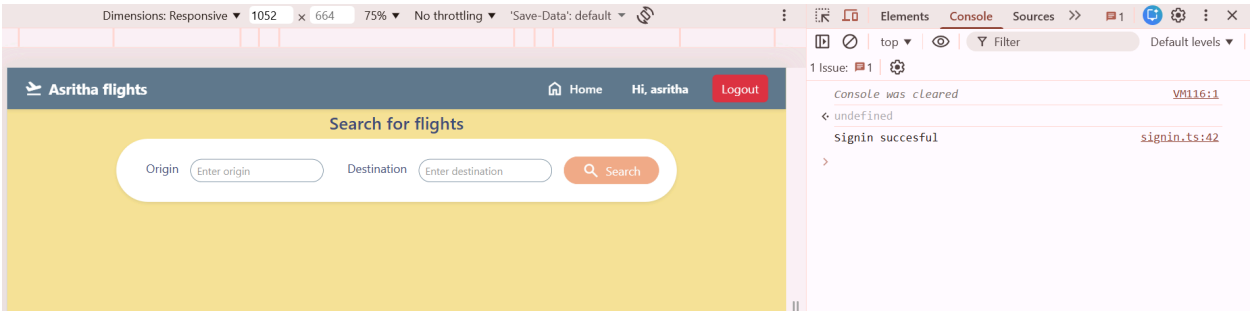
Showing if email already in use:



Sign up redirects to sign in



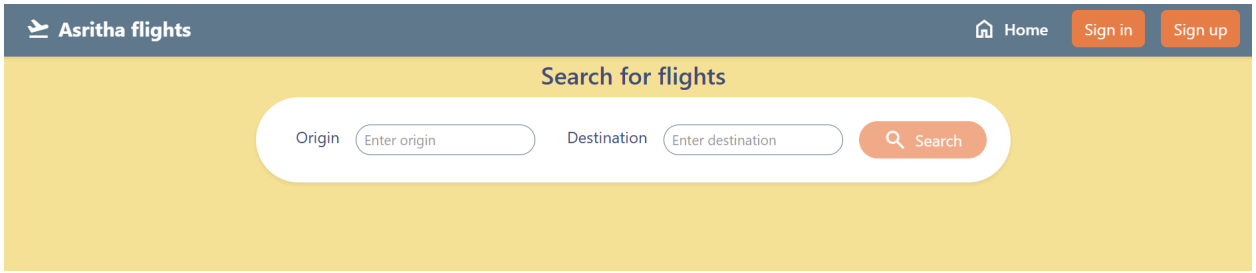
Sign in redirects to home page with changes in nav bar



Changes in nav bar.

Logout button added

After logging out nav bar changes back and page refreshes:



Routing

Configuration: `src/app/app.routes.ts`

Defined Routes

- **`/` → Home**
  `src/app/components/home/home.ts`
- **`/signup` → Signup**
  `src/app/components/signup/signup.ts`
- **`/signin` → Signin**
  `src/app/components/signin/signin.ts`
- **`/flights` → FlightList**
  `src/app/components/flight-list/flight-list.ts`
- **`/book` → TicketBooking** *(protected by `userOrAdminGuard`)*
  `src/app/components/ticket-booking/ticket-booking.ts`
- **`/register` → PassengerRegistration** *(protected by `userOrAdminGuard`)*
  `src/app/components/passenger-registration/passenger-registration.ts`

Used Bootstrap for css and overrided for customization

Route Guards

All guards are **reactive** and depend on the `currentUser` observable from `AuthService`. Redirections are handled using Angular `Router`.

`authGuard`

- **Source**: `src/app/gaurds/auth.gaurd.ts`
- **Logic**:
  - Allows navigation if a user is logged in.
  - Otherwise, redirects to `/signin`.
- **Status**: Implemented but **not currently applied** to any route.

`adminGuard`

- **Source**: `src/app/gaurds/admin.gaurd.ts`
- **Logic**:
  - Allows navigation only if `currentUser.roles` contains `ROLE_ADMIN`.
  - Otherwise, redirects to `/signin`.
- **Status**: Implemented but **not currently applied** to any route.

`userOrAdminGuard`

- **Source**: `src/app/gaurds/userOrAdminGuard.ts`
- **Logic**:
  - If no authenticated user → redirect to `/` and deny access.
  - If roles include `ROLE_USER` or `ROLE_ADMIN` → allow access.
  - Otherwise → redirect to `/` and deny access.
- **Usage**:
  - Protects `/book`
  - Protects `/register`

Navigation Flows

Navbar & Logout

- **Sources**:
    - `src/app/app.ts`
    - `src/app/app.html`

Behavior:

- When no user is authenticated:
    - Displays **Sign in** and **Sign up** buttons.
- When authenticated:
    - Displays the username and a **Logout** button.
- On logout:
    - `AuthService.signout()` is called.
    - User is navigated to `/`.
    - A full page reload is triggered to reset application state.

Signup Flow

- **Component**: `components/signup/signup.ts`
- On successful signup:
    - Authentication errors are cleared.
    - User is redirected to `/signin`.

Signin Flow

- **Component**: `components/signin/signin.ts`
- On successful signin:
    - User is redirected to `/`.
- On authentication failure:
    - Says username and password is wrong

Home → Flight Search

- **Component**: `components/home/home.ts`
- Submits `origin` and `destination` to: FlightService.getFlightByOriginAndDestination()
- Results are rendered using the reusable `FlightList` component.

Booking from Flight List

- **Component**: `components/flight-list/flight-list.ts`

Flow:

1. If the user is not authenticated → redirect to `/signin`.
2. If authenticated:
    - Fetch passenger details using the logged-in user's email.
    - If passenger exists → navigate to `/book` with:
      history.state = { flightId }
    - If passenger does not exist (404) → redirect to `/register`.

Validation Logic

Custom Validators

`usernameValidator`

- **Source**: `src/app/validatorFunctions/usernameValidator.ts`
- Rules:
    - Must start with a letter → `mustStartWithLetter`
    - No spaces allowed → `noSpaces`
    - Allowed characters: `^[A-Za-z][\w]*$` → `invalidChars`
    - Minimum length: 5 → `minLength`

`passwordValidator`

- **Source**: `src/app/validatorFunctions/passwordValidator.ts`
- Rules:
    - Minimum length: 6 → `minLength`
    - No spaces allowed → `noSpaces`

Form-Level Validation

Signup Form

- **Component**: `components/signup/signup.ts`
- Fields:

    - email: required, email
    - username: required, usernameValidator
    - password: required, passwordValidator
- Role handling:
    - Selected roles are stored as enums (e.g., ROLE_ADMIN).
    - Before submission, roles are transformed in AuthService.signup() by:
        - Removing the ROLE_ prefix
        - Converting to lowercase (e.g., admin)

Signin Form

- **Component**: components/signin/signin.ts
- Fields:
    - username: required, usernameValidator
    - password: required, passwordValidator

Home Flight Search Form

- **Component**: components/home/home.ts
- Fields:
    - origin: required, pattern('^[A-Za-z]+$')
    - destination: required, pattern('^[A-Za-z]+$')

AuthService Integration

- **Source**: src/app/services/Authentication/auth-service.ts

Core Responsibilities

- **currentUser**:
    - BehaviorSubject-backed observable.
    - Initialized on service construction by calling /api/auth/me.
- **signin()**:
    - Updates currentUser with UserResponse containing:
        - id, username, email, roles
- **signout()**:
    - Clears the currentUser BehaviorSubject.
- **signup()**:
    - Maps frontend role enums to backend-compatible role strings.

- **`error$`**:
    - Emits normalized authentication errors.
    - Consumed by the Signup component for user feedback.

Backend code changes:

GET /api/auth/me end point was added in the backend to know the current user logged in.

Frontend uses it to:

- restore login after refresh
- show logout button
- hide signin/signup

`BehaviorSubject<UserResponse | null>` is built around this.

CORS configuration to allow Angular (4200)

Because:

- Angular runs on `http://localhost:4200`
- Backend runs on `http://localhost:8765`
- Browser blocks this by default

So we **allowed it explicitly**.

config.setAllowedOrigins(List.of("http://localhost:4200"));