Frontend Authentication System Documentation

Overview

This documentation covers the frontend authentication system for the Enrichify data analytics platform. The system includes three main components: user registration, login, and password reset functionality.

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System Architecture

The authentication system is built using:

- **React 18+** with functional components and hooks
- **React Router** for navigation
- **Axios** for HTTP requests
- **Lucide React** for icons
- **CSS Modules** for styling
- **Local Storage** for session management

Backend Integration

- **Base URL**: `https://datazapptoolbackend.vercel.app`
- **Endpoints**:
  - `POST /register` - User registration
  - `POST /login` - User authentication

- `POST /resetpassword` - Password reset
- `POST /consumer-data` - Submit consumer filtering criteria and send admin notification

Components Overview

1. Authmiddleware Component

File: `Authmiddleware.jsx` **Purpose**: Route protection component that ensures only authenticated users can access protected routes

Key Features:

- **Simple authentication check** using localStorage
- **Automatic redirection** to registration page for unauthenticated users
- **Higher-order component pattern** for wrapping protected routes

Implementation:

```javascript
const Authmiddleware = ({ children }) => {
  return localStorage.getItem('user') ? children : <Navigate to="/" />;
}
```

Usage Example:

```javascript
// Protecting a route
<Route path="/dashboard" element={
  <Authmiddleware>
    <Dashboard />
  </Authmiddleware>
} />

// Main consumer interface route
<Route path="/consumer" element={
  <Authmiddleware>
    <Consumer />
  </Authmiddleware>
} />
```

3. Consumer Component

File: consumer.jsx **Purpose**: Main data filtering interface where users select consumer targeting criteria

Key Features:

- **Multi-tab interface** for different filter categories
- **Real-time state updates** as users make selections
- **Context integration** for persistent filter storage
- **Progressive data collection** across multiple steps

Data Flow:

1. **User selects filters** across various tabs/sections
2. **Each selection updates** the ConsumerContext state
3. **State persists** as user navigates between tabs
4. **Final submission** sends complete criteria to backend

Filter Categories Managed:

```javascript
// Geographic targeting
const handleLocationChange = (field, values) => {
  setState(prev => ({ ...prev, [field]: values }));
};

// Demographic filtering
const handleDemographicChange = (field, values) => {
  setState(prev => ({ ...prev, [field]: values }));
};

// Interest-based targeting
const handleInterestChange = (field, values, operator = 'AND') => {
  setState(prev => ({
    ...prev,
    [field]: values,
    [`${field}_op`]: operator
  }));
};
```

4. Suppression Tab Component

File: Part of `consumer.jsx` or separate component **Purpose**: Final step where user reviews selections and submits data for processing

Key Features:

- **Data review interface** showing all selected filters
- **Suppression list options** for data cleanup
- **Final submission** to backend with admin notification
- **Campaign naming** and saving functionality

Implementation Flow:

```javascript
const handleSuppressionSubmit = async () => {
  try {
    const submissionData = {
      ...state,                    // All filter criteria from context
      user: getCurrentUser(),      // Current user information
      timestamp: new Date(),       // Submission timestamp
      suppression_option: state.supression_option
    };

    const response = await axios.post(`${API_BASE}/consumer-data`, submissionData);

    // Success handling
    alert('Data submitted successfully! Admin has been notified.');

  } catch (error) {
    console.error('Submission error:', error);
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};
```

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  try {
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      ...state,                  // All filter criteria from context
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      timestamp: new Date(),     // Submission timestamp
      suppression_option: state.supression_option
    };

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    // Success handling
    alert('Data submitted successfully! Admin has been notified.');

  } catch (error) {
    console.error('Submission error:', error);
    alert('Submission failed. Please try again.');
  }
};
```

2. ConsumerContextProvider Component

File: `ConsumerContextProvider.jsx` **Purpose**: Global state management for consumer data filtering and campaign configuration

Key Features:

- **Centralized state management** using React Context API
- **Comprehensive consumer data filtering** options
- **Campaign configuration** state management
- **Global state accessibility** across all child components

State Structure:

```
javascript
```

```
const initialState = {
    // Campaign Configuration
    campaign_type: '',
    phone_options: '',
    dedup_option: '',
    save_name: '',
    supression_option: '',
    user: '',

    // Geographic Filters
    zip_codes: [],
    states: [],
    cities: [],

    // Demographic Filters
    dwelling_type: [],
    home_owner: [],
    hh_income: [],
    indivisuals: [],
    martial_status: [],
    age_group: [],
    credit_rating: [],
    occupation: '',
    ethnic_code: [],
    turning_65: [],

    // Interest & Behavior Filters
    propensity_to_give: [],
    donor_affinity_range: [],
    donor_affinity_op: 'AND',
    pet_range: [],
    pet_op: 'AND',
    propensity_range: [],
    propensity_op: 'AND',
    outdoor_range: [],
    outdoor_op: 'AND',
    sports_and_fitness_range: [],
    sports_and_fitness_op: 'AND',
    travel_and_hobbies_range: [],
    travel_and_hobbies_op: 'AND',
    genre_range: [],
```

```
    genre_op: 'AND'
}
```

5. RegistrationPage Component

File: `RegistrationPage.jsx` **Purpose**: Handles new user account creation with comprehensive validation

Key Features:

- **Multi-field form** with name, email, phone, address, password fields
- **Real-time password strength indicator**
- **Password confirmation matching**
- **Terms of service modal**
- **Database statistics display** (218M records, 82M emails, 76M cell phones)
- **Mobile-responsive design**

Form Fields:

```javascript
const formData = {
  name: '',          // Full name (required)
  email: '',         // Email address (required, validated)
  password: '',      // Password (min 8 chars, complexity required)
  confirmPassword: '', // Password confirmation (must match)
  address: '',       // Physical address (required)
  phone: '',         // Phone number (required, format validated)
  agreeToTerms: false // Terms agreement checkbox (required)
}
```

6. LoginPage Component

File: `LoginPage.jsx` **Purpose**: Handles user authentication and session management

Key Features:

- **Simple two-field form** (email and password)
- **Password visibility toggle**
- **Navigation links** to registration and password reset
- **Session storage** using localStorage
- **Loading states** with spinner animation

Form Fields:

```javascript
const formData = {
  email: '',    // User email (required, validated)
  password: ''  // User password (required)
}
```

7. ResetPassword Component

File: `ResetPassword.jsx` **Purpose**: Handles password reset functionality

Key Features:

- **Email and new password fields**
- **Password strength validation**
- **Success/error state management**
- **Retry functionality**
- **Navigation back to login**

Form Fields:

```javascript
const formData = {
  email: '',    // User email (required)
  password: ''  // New password (min 6 chars)
}
```

API Integration

Data Collection Process

The consumer interface follows a multi-step workflow where users progressively build their target audience criteria:

Step 1: Filter Selection

Users navigate through different tabs/sections in the consumer interface:

```javascript
```

```
// Example: Geographic targeting tab
const GeographicTab = () => {
  const { state, setState } = useContext(ConsumerContext);

  const handleStateSelection = (selectedStates) => {
    setState(prev => ({
      ...prev,
      states: selectedStates
    }));
  };

  return (
    <div>
      <MultiSelect
        options={STATE_OPTIONS}
        value={state.states}
        onChange={handleStateSelection}
        placeholder="Select target states..."
      />
    </div>
  );
};
```

Step 2: Real-time State Updates

Each user interaction immediately updates the global context:

```
javascript
```

```javascript
// Demographic filters
const handleAgeGroupChange = (ageGroups) => {
  setState(prev => ({ ...prev, age_group: ageGroups }));
};

// Behavioral targeting with operators
const handleDonorAffinityChange = (ranges, operator) => {
  setState(prev => ({
    ...prev,
    donor_affinity_range: ranges,
    donor_affinity_op: operator
  }));
};

// Income targeting
const handleIncomeChange = (incomeRanges) => {
  setState(prev => ({ ...prev, hh_income: incomeRanges }));
};
```

Step 3: Campaign Configuration

Users set campaign-specific options:

```javascript
```

```
const CampaignConfigTab = () => {
  const { state, setState } = useContext(ConsumerContext);

  return (
    <div>
      <select
        value={state.campaign_type}
        onChange={(e) => setState(prev => ({
          ...prev,
          campaign_type: e.target.value
        }))}
      >
        <option value="">Select Campaign Type</option>
        <option value="email">Email Campaign</option>
        <option value="phone">Phone Campaign</option>
        <option value="direct_mail">Direct Mail</option>
      </select>

      <input
        type="text"
        placeholder="Campaign Name"
        value={state.save_name}
        onChange={(e) => setState(prev => ({
          ...prev,
          save_name: e.target.value
        }))}
      />
    </div>
  );
};
```

Suppression Tab Workflow

The suppression tab serves as the final review and submission step:

Data Review Interface

javascript

```
const SuppressionTab = () => {
  const { state } = useContext(ConsumerContext);

  const getSelectedCriteria = () => {
    const criteria = {};
    Object.keys(state).forEach(key => {
      if (Array.isArray(state[key]) && state[key].length > 0) {
        criteria[key] = state[key];
      } else if (typeof state[key] === 'string' && state[key].trim()) {
        criteria[key] = state[key];
      }
    });
    return criteria;
  };

  const selectedCriteria = getSelectedCriteria();

  return (
    <div className="suppression-review">
      <h3>Campaign Summary</h3>
      <div className="criteria-review">
        {Object.entries(selectedCriteria).map(([key, value]) => (
          <div key={key} className="criteria-item">
            <label>{formatFieldName(key)}:</label>
            <span>{Array.isArray(value) ? value.join(', ') : value}</span>
          </div>
        ))}
      </div>
    </div>
  );
};
```

Final Submission Process

javascript

```
const handleFinalSubmission = async () => {
  try {
    // Validate required fields
    if (!state.campaign_type) {
      alert('Please select a campaign type');
      return;
    }

    if (!state.save_name) {
      alert('Please provide a campaign name');
      return;
    }

    // Prepare submission data
    const submissionData = {
      ...state,
      user: JSON.parse(localStorage.getItem('user')),
      submission_timestamp: new Date().toISOString(),
      estimated_records: calculateEstimatedRecords(state)
    };

    setIsSubmitting(true);

    // Submit to backend
    const response = await axios.post(
      `${API_BASE}/consumer-data`,
      submissionData
    );

    // Handle success
    alert('Campaign submitted successfully! You will receive confirmation shortly.');

    // Reset form or redirect
    setState(initialState);

  } catch (error) {
    console.error('Submission error:', error);
    alert('Submission failed. Please try again.');
  } finally {
    setIsSubmitting(false);
  }
};
```

Backend Processing & Admin Notification

When the suppression tab submission occurs:

1. Data Processing

```javascript
// Backend receives complete criteria object
const processConsumerRequest = async (requestData) => {
  // Validate and sanitize data
  const cleanedData = sanitizeRequestData(requestData);

  // Calculate estimated records
  const recordEstimate = await estimateRecordCount(cleanedData);

  // Store request in database
  const requestId = await saveConsumerRequest({
    ...cleanedData,
    estimated_records: recordEstimate,
    status: 'pending'
  });

  // Trigger admin notification
  await sendAdminNotification(requestId, cleanedData);

  return { success: true, requestId, estimatedRecords: recordEstimate };
};
```

2. Admin Email Notification

The system automatically sends a detailed email to administrators:

To: admin@enrichifydata.com
Subject: New Consumer Data Request - [Campaign Name]

CLIENT INFORMATION:
- User: john.doe@company.com
- Name: John Doe
- Phone: +1 (555) 123-4567
- Submitted: August 22, 2024 at 2:30 PM EST

CAMPAIGN DETAILS:
- Campaign Name: Spring Marketing 2024
- Campaign Type: Email Marketing
- Deduplication: Household level
- Suppression Options: Do Not Call List, Previous Customers

TARGETING CRITERIA:
Geographic:
- States: California, New York, Texas
- ZIP Codes: 90210, 10001, 73301
- Cities: Los Angeles, New York, Austin

Demographics:
- Age Groups: 25-34, 35-44
- Household Income: $50,000-$75,000, $75,000-$100,000
- Home Ownership: Homeowners only
- Marital Status: Married

Behavioral/Interest:
- Donation Propensity: High (AND)
- Pet Ownership: Dog owners (AND)
- Outdoor Activities: Camping, Hiking (OR)

ESTIMATED RECORDS: ~18,500
REQUEST ID: REQ-20240822-001

Action Required: Review and process this data request.

3. Admin Dashboard Integration

The request also appears in the admin dashboard for tracking and processing:

javascript

```javascript
// Admin can view, approve, or modify requests
const adminDashboardData = {
  requestId: 'REQ-20240822-001',
  client: 'john.doe@company.com',
  campaignName: 'Spring Marketing 2024',
  estimatedRecords: 18500,
  status: 'pending',
  submittedAt: '2024-08-22T14:30:00Z',
  criteria: { /* full criteria object */ }
};
```

Authentication Flow

Registration

```javascript
// POST /register
const response = await axios.post(`${API_BASE}/register`, {
  name: "John Doe",
  email: "john@example.com",
  password: "SecurePass123",
  confirmPassword: "SecurePass123",
  address: "123 Main St, City, State",
  phone: "+1234567890",
  agreeToTerms: true
});
```

Login

```javascript
// POST /login
const response = await axios.post(`${API_BASE}/login`, {
  email: "john@example.com",
  password: "SecurePass123"
});

// Store user data in localStorage
localStorage.setItem('user', JSON.stringify(response.data.user));
```

Password Reset

```javascript
// POST /resetpassword
const response = await axios.post(`${API_BASE}/resetpassword`, {
  email: "john@example.com",
  password: "NewSecurePass123"
});
```

Consumer Data Submission

```javascript
// POST /consumer-data
const response = await axios.post(`${API_BASE}/consumer-data`, {
  // All filter criteria from ConsumerContext
  campaign_type: "email",
  phone_options: "mobile_only",
  dedup_option: "household",
  zip_codes: ["90210", "10001"],
  states: ["CA", "NY"],
  cities: ["Los Angeles", "New York"],
  dwelling_type: ["single_family"],
  home_owner: ["yes"],
  hh_income: ["50000-75000"],
  age_group: ["25-34", "35-44"],

  // Behavioral targeting
  propensity_to_give: ["high"],
  donor_affinity_range: ["children", "environment"],
  pet_range: ["dog_owner"],

  // Campaign details
  save_name: "Spring Campaign 2024",
  suppression_option: "do_not_call_list",
  user: JSON.parse(localStorage.getItem('user')),
  timestamp: new Date().toISOString()
});

// Backend response triggers admin email notification
```

Email Notification System

When consumer data is submitted through the suppression tab:

1. **Backend receives** complete filter criteria
2. **Admin email is triggered** with campaign details:

   Subject: New Consumer Data Request - Spring Campaign 2024

   User: john@example.com
   Campaign Type: Email Marketing
   Target Criteria:
   - States: CA, NY
   - Age Groups: 25-34, 35-44
   - Income: $50,000-$75,000
   - Pet Owners: Dogs
   - Suppression: Do Not Call List

   Total Estimated Records: ~15,000
   Submitted: 2024-08-22 10:30 AM

3. **Admin reviews and processes** the request
4. **Data compilation** begins based on criteria

Error Handling

All API calls implement try-catch error handling:

```javascript
try {
  const response = await axios.post(endpoint, data);
  // Success handling
} catch (error) {
  const errorMessage = error?.response?.data?.error || "Client error please try again";
  alert(errorMessage);
  // Error state management
}
```

Form Validation

Registration Validation Rules

Field	Validation Rules
Name	Required, non-empty
Email	Required, valid email format (`/\S+@\S+\.\S+/`)
Phone	Required, valid phone format (`/^\+?[\d\s\-\(\)]+$/`)
Address	Required, non-empty
Password	Min 8 chars, uppercase, lowercase, number required
Confirm Password	Must match password exactly
Terms Agreement	Must be checked

Password Strength Assessment

The system evaluates password strength based on:

1. **Length** (≥8 characters)
2. **Lowercase** letters (a-z)
3. **Uppercase** letters (A-Z)
4. **Numbers** (0-9)
5. **Special characters** (!@#$%^&*)

Strength Levels:

- **Very Weak** (0-1 criteria): Red
- **Weak** (2 criteria): Orange
- **Fair** (3 criteria): Yellow
- **Good** (4 criteria): Light Green
- **Strong** (5 criteria): Green

Login Validation Rules

Field	Validation Rules
Email	Required, valid email format
Password	Required, non-empty

Password Reset Validation Rules

Field	Validation Rules
Email	Required, valid email format
New Password	Required, minimum 6 characters

User Interface Features

Design Elements

Branding Section

- **Company logo** prominently displayed
- **Feature highlights** with icons:
  - 🛡️ Enterprise-grade security
  - ⚡ Real-time data processing
  - 🌐 Global data coverage
- **Database statistics** showcase
- **Gradient backgrounds** with decorative circles

Form Section

- **Clean, modern design** with proper spacing
- **Input field icons** for visual enhancement
- **Real-time validation** feedback
- **Loading states** with spinner animations
- **Responsive layout** for mobile and desktop

Interactive Elements

Password Visibility Toggle

```javascript
const [showPassword, setShowPassword] = useState(false);

// Toggle button in password input
<button onClick={() => setShowPassword(!showPassword)}>
  {showPassword ? <EyeOff /> : <Eye />}
</button>
```

Loading States

```javascript
const [isSubmitting, setIsSubmitting] = useState(false);

// Button content changes during submission
{isSubmitting ? (
  <div>
    <Spinner />
    Processing...
  </div>
) : (
  'Submit'
)}
```

Modal Components

Terms of Service Modal (Registration)

- **Full-screen overlay** with scrollable content
- **Complete terms text** with legal clauses
- **Close button** functionality
- **Styled content** with proper typography

Error Handling

Client-Side Validation

- **Real-time validation** as user types
- **Error messages** displayed below each field
- **Form submission prevention** when validation fails
- **Error state clearing** when user corrects input

Server-Side Error Management

- **Standardized error responses** from API
- **User-friendly error messages** via alerts
- **Fallback error handling** for network issues
- **Error state visual indicators**

Error Display Patterns

```javascript
// Error state management
const [errors, setErrors] = useState({});

// Display error for specific field
{errors.email && <p className={styles.error}>{errors.email}</p>}

// Clear errors on input change
const handleChange = (e) => {
  // ... update form data
  if (errors[name]) {
    setErrors(prev => ({ ...prev, [name]: '' }));
  }
};
```

Security Features

Input Validation

- **Client-side validation** for immediate feedback
- **Server-side validation** for security
- **XSS prevention** through proper input handling
- **CSRF protection** via API design

Password Security

- **Minimum complexity requirements**
- **Strength visualization** for user guidance
- **Secure password field** with toggle visibility
- **Password confirmation** to prevent typos

Session Management

- **JWT token storage** in localStorage
- **Automatic session cleanup** on logout
- **Secure API communication** via HTTPS

Setup and Installation

Prerequisites

```bash
# Required dependencies
npm install react react-dom react-router-dom
npm install axios
npm install lucide-react
```

Application Setup

1. Context Provider Setup

Wrap your main application with the ConsumerContextProvider:

```javascript
// App.js
import React from 'react';
import { BrowserRouter } from 'react-router-dom';
import ConsumerContextProvider from './context/ConsumerContextProvider';
import AppRoutes from './routes/AppRoutes';

function App() {
  return (
    <ConsumerContextProvider>
      <BrowserRouter>
        <AppRoutes />
      </BrowserRouter>
    </ConsumerContextProvider>
  );
}

export default App;
```

2. Route Protection Setup

Configure your routes with authentication middleware:

```javascript
```

```
// routes/AppRoutes.js
import { Routes, Route } from 'react-router-dom';
import Authmiddleware from '../middleware/Authmiddleware';
import RegistrationPage from '../components/RegistrationPage';
import LoginPage from '../components/LoginPage';
import ResetPassword from '../components/ResetPassword';
import Dashboard from '../components/Dashboard';

const AppRoutes = () => {
  return (
    <Routes>
      {/* Public Routes */}
      <Route path="/" element={<RegistrationPage />} />
      <Route path="/login" element={<LoginPage />} />
      <Route path="/forgetpassword" element={<ResetPassword />} />

      {/* Protected Routes */}
      <Route path="/consumer" element={
        <Authmiddleware>
          <Dashboard />
        </Authmiddleware>
      } />

      <Route path="/dashboard" element={
        <Authmiddleware>
          <Dashboard />
        </Authmiddleware>
      } />
    </Routes>
  );
};

export default AppRoutes;
```

3. Context Usage in Components

Access and update global state in any component:

```
javascript
```

```javascript
// Example component using ConsumerContext
import React, { useContext } from 'react';
import { ConsumerContext } from '../context/ConsumerContextProvider';

const FilterComponent = () => {
  const { state, setState } = useContext(ConsumerContext);

  const updateFilter = (field, value) => {
    setState(prevState => ({
      ...prevState,
      [field]: value
    }));
  };

  return (
    <div>
      <select onChange={(e) => updateFilter('campaign_type', e.target.value)}>
        <option value="">Select Campaign Type</option>
        <option value="email">Email Campaign</option>
        <option value="phone">Phone Campaign</option>
      </select>
    </div>
  );
};
```

State Management Architecture

Consumer Context Structure

The application uses React Context API for centralized state management of consumer data filtering and campaign configuration. The state is organized into several categories:

Campaign Configuration

```javascript
```

```
{
  campaign_type: '',     // Type of marketing campaign
  phone_options: '',     // Phone number options
  dedup_option: '',      // Deduplication settings
  save_name: '',         // Saved campaign name
  supression_option: '', // Suppression list options
  user: ''               // Current user information
}
```

Geographic Targeting

```
javascript

{
  zip_codes: [],   // Array of target ZIP codes
  states: [],      // Array of target states
  cities: []       // Array of target cities
}
```

Demographic Filters

```
javascript

{
  dwelling_type: [],   // Housing type preferences
  home_owner: [],      // Homeownership status
  hh_income: [],       // Household income ranges
  indivisuals: [],     // Individual characteristics
  martial_status: [],  // Marital status options
  age_group: [],       // Age range targeting
  credit_rating: [],   // Credit score ranges
  occupation: '',      // Professional categories
  ethnic_code: [],     // Ethnicity targeting
  turning_65: []       // Seniors approaching 65
}
```

Interest & Behavioral Targeting

```
javascript
```

```
{
  // Donation propensity
  propensity_to_give: [],
  propensity_range: [],
  propensity_op: 'AND',

  // Donor affinity
  donor_affinity_range: [],
  donor_affinity_op: 'AND',

  // Pet ownership
  pet_range: [],
  pet_op: 'AND',

  // Outdoor activities
  outdoor_range: [],
  outdoor_op: 'AND',

  // Sports and fitness
  sports_and_fitness_range: [],
  sports_and_fitness_op: 'AND',

  // Travel and hobbies
  travel_and_hobbies_range: [],
  travel_and_hobbies_op: 'AND',

  // Entertainment genres
  genre_range: [],
  genre_op: 'AND'
}
```

Context Provider Implementation

The ConsumerContextProvider manages global state and provides it to all child components:

javascript

```
export const ConsumerContext = createContext();

const ConsumerContextProvider = ({ children }) => {
  const [state, setState] = useState({
    // ... all state properties
  });

  return (
    <ConsumerContext.Provider value={{ state, setState }}>
      {children}
    </ConsumerContext.Provider>
  );
};
```

Authentication Middleware

The Authmiddleware component provides route protection:

```
javascript

const Authmiddleware = ({ children }) => {
  return localStorage.getItem('user') ? children : <Navigate to="/" />;
};
```

How It Works:

1. **Checks localStorage** for 'user' key
2. **Renders children** if user is authenticated
3. **Redirects to registration** (`/`) if not authenticated
4. **Uses React Router Navigate** for programmatic navigation

```
javascript

import React, { useState } from 'react';
import { useNavigate } from 'react-router-dom';
import axios from 'axios';
import { Eye, EyeOff, /* other icons */ } from 'lucide-react';
```

2. Set up routing:

```
javascript
```

```
// In your main App.js
import { BrowserRouter, Routes, Route } from 'react-router-dom';
import RegistrationPage from './components/RegistrationPage';
import LoginPage from './components/LoginPage';
import ResetPassword from './components/ResetPassword';

<BrowserRouter>
  <Routes>
    <Route path="/" element={<RegistrationPage />} />
    <Route path="/login" element={<LoginPage />} />
    <Route path="/forgetpassword" element={<ResetPassword />} />
  </Routes>
</BrowserRouter>
```

3. Configure API base URL:

```
javascript

const API_BASE = 'https://datazapptoolbackend.vercel.app';
```

Component APIs

Authmiddleware Props

Prop	Type	Required	Description
children	ReactNode	Yes	Components to render if authenticated

Usage:

```
javascript

<Authmiddleware>
  <ProtectedComponent />
</Authmiddleware>
```

ConsumerContextProvider Props

Prop	Type	Required	Description
children	ReactNode	Yes	Components that need access to consumer context

Context Value:

```javascript
{
  state: Object,     // Current filter/campaign state
  setState: Function  // State update function
}
```

Usage:

```javascript
const { state, setState } = useContext(ConsumerContext);

// Update single field
setState(prev => ({ ...prev, campaign_type: 'email' }));

// Update multiple fields
setState(prev => ({
  ...prev,
  states: ['CA', 'NY'],
  cities: ['Los Angeles', 'New York']
}));
```

RegistrationPage Props

The component doesn't accept props but manages internal state for:

- Form data
- Validation errors
- Submission status
- Modal visibility

LoginPage Props

The component doesn't accept props but manages:

- Authentication credentials
- Login state
- Error handling

ResetPassword Props

The component doesn't accept props but handles:

- Reset form data
- Success/error states
- Retry functionality

Common Hooks Used

```javascript
// State management
const [formData, setFormData] = useState({});
const [errors, setErrors] = useState({});
const [isSubmitting, setIsSubmitting] = useState(false);

// Navigation
const navigate = useNavigate();

// Password visibility
const [showPassword, setShowPassword] = useState(false);
```

Styling and Theming

CSS Modules Structure

Each component uses CSS Modules for scoped styling:

```css
/* LoginPage.module.css */
.container { /* Main container */ }
.card { /* Main content card */ }
.branding { /* Left branding section */ }
.formSection { /* Right form section */ }
.formGroup { /* Individual form fields */ }
.submitButton { /* Action buttons */ }
.error { /* Error message styling */ }
```

Design System

- **Primary Colors**: Blue/teal gradient theme
- **Typography**: Modern, clean fonts
- **Spacing**: Consistent padding/margins

- **Interactive States**: Hover effects, focus states
- **Animations**: Loading spinners, smooth transitions

Responsive Design

- **Mobile-first approach** with media queries
- **Flexible layouts** using CSS Grid/Flexbox
- **Adaptive typography** for different screen sizes
- **Touch-friendly** interactive elements

Custom Components Styling

Spinner Animation

```css
.spinner {
  width: 20px;
  height: 20px;
  border: 2px solid #f3f3f3;
  border-top: 2px solid #3498db;
  border-radius: 50%;
  animation: spin 1s linear infinite;
}

@keyframes spin {
  0% { transform: rotate(0deg); }
  100% { transform: rotate(360deg); }
}
```

Password Strength Bar

```css
```

```
.strengthBar {
  width: 100%;
  height: 4px;
  background-color: #e2e8f0;
  border-radius: 2px;
  overflow: hidden;
}

.strengthFill {
  height: 100%;
  transition: width 0.3s ease, background-color 0.3s ease;
}
```

Best Practices

Authentication Flow

- **Store user data** in localStorage after successful login
- **Clear user data** on logout or session expiry
- **Check authentication status** before making protected API calls
- **Implement token refresh** logic for long-running sessions

State Management

- **Use Context sparingly** - only for truly global state
- **Keep local state local** - don't put everything in global context
- **Batch state updates** when updating multiple fields
- **Use functional updates** to prevent stale closure issues:

```javascript
// Good - functional update
setState(prevState => ({ ...prevState, newField: value }));

// Avoid - direct state reference
setState({ ...state, newField: value });
```

Context Performance Optimization

- **Split contexts** by concern if state becomes too large
- **Memoize context values** to prevent unnecessary re-renders:

```javascript
const contextValue = useMemo(() => ({
  state,
  setState
}), [state]);

<ConsumerContext.Provider value={contextValue}>
```

- **Use multiple contexts** for different data domains
- **Implement selectors** for components that only need specific state slices

Route Protection

- **Implement role-based access** for different user types
- **Handle authentication redirects** gracefully
- **Preserve intended routes** after login (redirect to originally requested page)
- **Clear sensitive data** on authentication failures
- Use `useState` for component-level state
- Clear form data after successful submission
- Reset error states when user modifies input

Performance Optimization

- Lazy load components where possible
- Minimize re-renders with proper dependency arrays
- Use debounced validation for better UX

Accessibility

- Proper ARIA labels on form elements
- Keyboard navigation support
- Screen reader friendly error messages
- High contrast color schemes

Error Handling

- Always provide fallback error messages
- Use user-friendly language in error messages

- Implement proper loading states
- Clear error states appropriately

Conclusion

This authentication system provides a complete, production-ready solution for user management with modern React patterns, comprehensive validation, and excellent user experience. The modular design allows for easy customization and extension as requirements evolve.