

# Project: MERN User Management System (UMS)

## **Approach:**

1. Implemented a clean MERN stack with JWT authentication, role-based access (admin/user), and secure profile image uploads.
2. Centralized configuration via environment variables: server CORS using CLIENT\_URLS, client API base using VITE\_API\_BASE\_URL.
3. Used Axios interceptors to attach Bearer tokens and refresh access tokens on 401.
4. Kept UI minimal and modern with smooth animations; ensured functionality remained intact.
5. Image URLs normalized to work across environments; served via Express static /uploads.

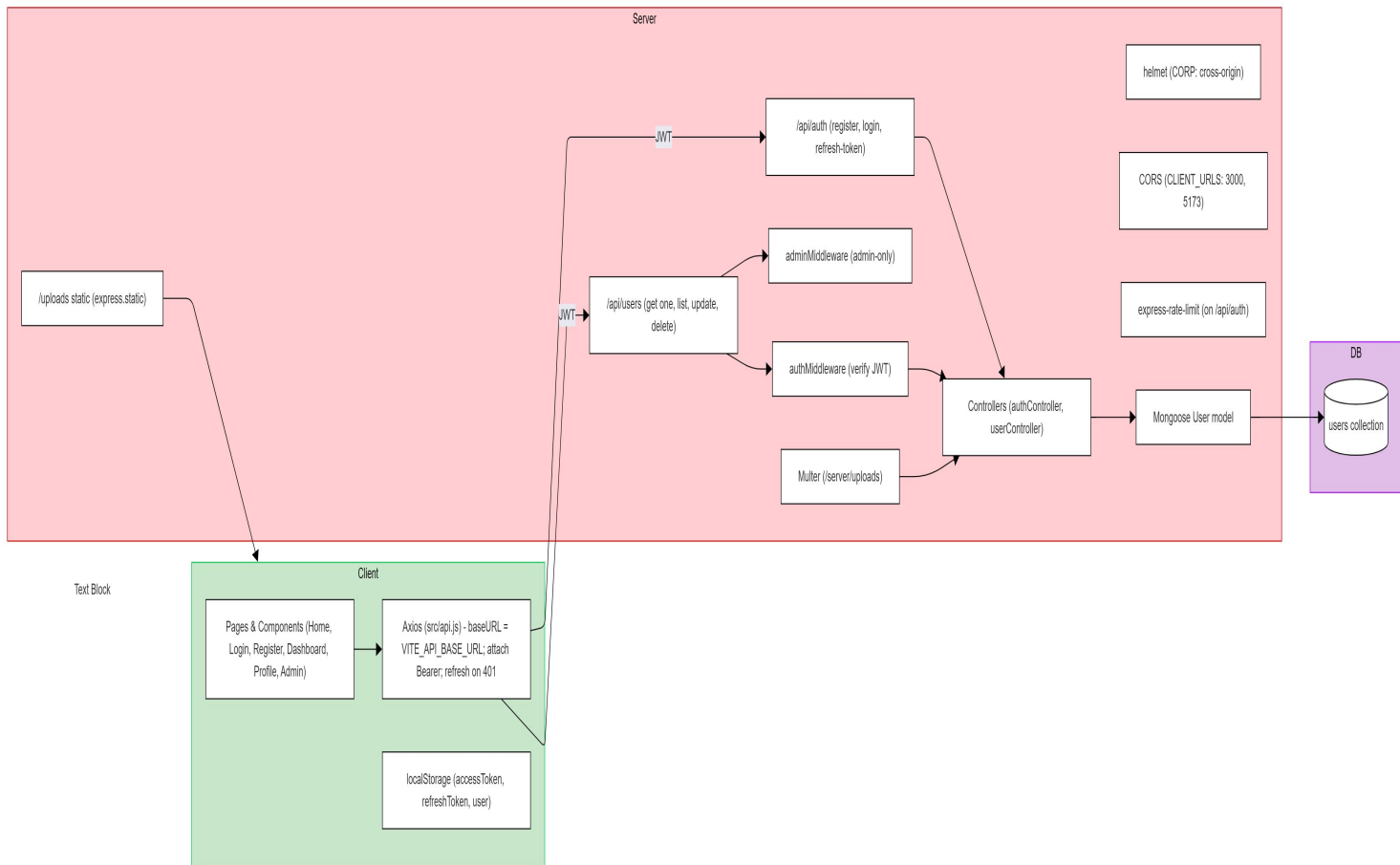
## **Challenges & Resolutions:**

1. CORS Mismatch: Client on 3000 vs Vite default 5173 caused preflight failures with credentials. Resolved by allowing multiple origins via CLIENT\_URLS and a dynamic origin function in CORS middleware.
2. Cross-Origin Resource Policy (CORP): Helmet default blocked images from different origins. Configured helmet with cross-origin policy and set explicit header on /uploads.
3. URL Consistency: Hardcoded API/image URLs were brittle. Introduced VITE\_API\_BASE\_URL for client and normalized image paths (absolute or relative) at render.
4. Token Lifecycle: Ensured smooth refresh logic while avoiding redirect loops by carefully updating storage and retrying failed requests.

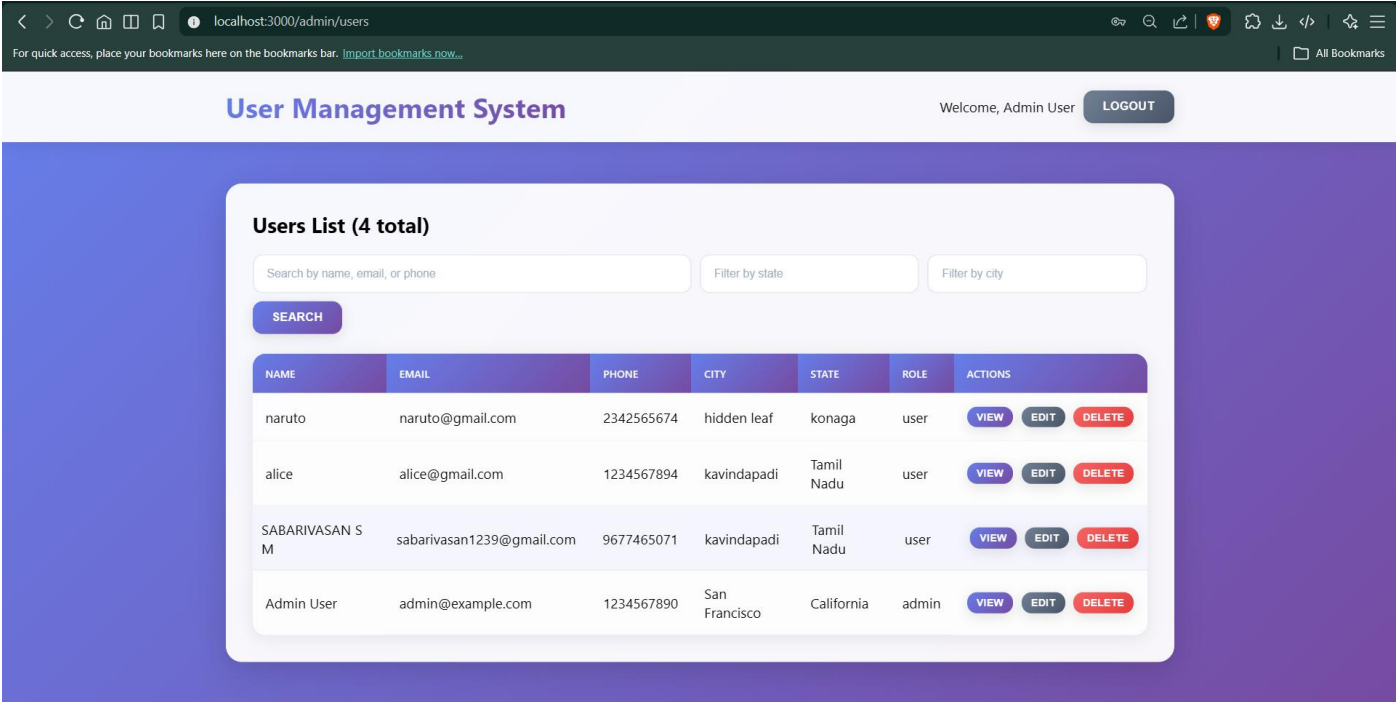
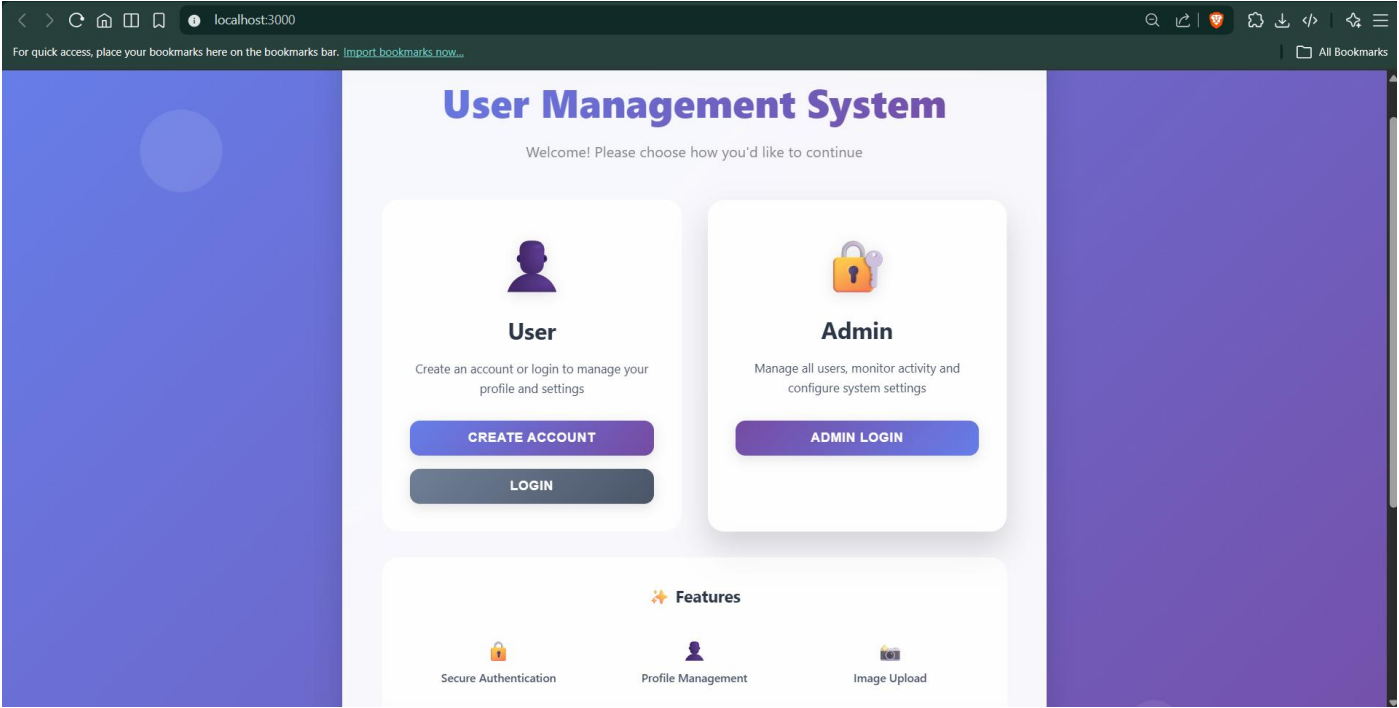
## ER Diagram:

USER			
string	_id	PK	
string	name		
string	email	UK	
string	phone	UK	
string	password		bcrypt hash
string	address		
string	city		
string	state		
string	country		
string	pincode		
string	role		enum: admin user (default: user)
string	profile_image		e.g. /uploads/
string	refreshToken		
datetime	created_at		
datetime	updated_at		

## Architecture Diagram:



Screenshots :



localhost:3000/register

For quick access, place your bookmarks here on the bookmarks bar. [import bookmarks now...](#)

All Bookmarks

Create Account

Join our user management system

Full Name \*

John Doe

Email \*

john@example.com

Phone \*

1234567890

Password \*

Min 6 chars with 1 digit

City \*

Los Angeles

State \*

California

Country \*

USA

Pincode \*

90001

Address

123 Main Street (Optional)

Profile Image (JPG/PNG, max 2MB)

Choose File

No file chosen

localhost:3000/dashboard


For quick access, place your bookmarks here on the bookmarks bar. [import bookmarks now...](#)

All Bookmarks

User Dashboard

EDIT PROFILE

LOGOUT



Welcome, SABARIVASAN S M!

sabarivasan1239@gmail.com

Email

sabarivasan1239@gmail.com

Phone

9677465071

Location

Role