

# BRENDA SANCHEZ

Software Engineer

[1techieSanchez@gmail.com](mailto:1techieSanchez@gmail.com) • <http://github.com/1BrendaSanchez> • <http://linkedin.com/-brenda-sanchez>

## Web Application Architecture Design

*Key Skills: MEAN Stack, MVC Pattern, GitHub Version Control*

- Designed a robust **Model-View-Controller (MVC)** architecture for the **Travlr Getaways** web application, ensuring clear separation of concerns across the client, server, and database layers.
- Created and maintained project branches using **Git** for version control, enabling efficient collaboration and code management.

## Single Page Application (SPA) Development

*Key Skills: Angular, Handlebars.js, JavaScript*

- Developed an **Angular-based SPA** for customers and administrators, providing a responsive, user-friendly interface for browsing trips, booking travel packages, and managing reservations.
- Integrated **Handlebars.js** to render dynamic content and **Angular components** for reusable UI elements, enhancing development efficiency and maintainability.

## RESTful API Development and Database Integration

*Key Skills: Node.js, Express.js, MongoDB, Mongoose ORM*

- Built secure **RESTful API endpoints** using **Node.js** and **Express.js** to handle user requests for trip listings, bookings, and account management.
- Created **MongoDB schemas** with **Mongoose**, ensuring efficient data storage and retrieval for user profiles, bookings, and travel packages.
- Implemented **CRUD operations** (Create, Read, Update, Delete) for trip management, allowing users and admins to interact seamlessly with the database.

## User Authentication and Role-Based Access

*Key Skills: JWT Authentication, Role-Based Access Control (RBAC)*

- Integrated **JWT-based authentication** to secure user access, ensuring only authorized users could access sensitive features.
- Implemented **role-based access control (RBAC)**, allowing administrators to manage trips, users, and system settings while restricting customer access to user-specific features.

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## Responsive UI and User Experience

*Key Skills: HTML5, CSS3, Bootstrap*

- Created a responsive, mobile-friendly UI using **HTML5**, **CSS3**, and **Bootstrap**, ensuring an optimal user experience across devices.
- Developed intuitive navigation for users to browse trips, book packages, and manage reservations efficiently.

## Deployment and Testing

*Key Skills: Postman, GitHub Actions, Manual Testing*

- Conducted thorough **API testing** with **Postman** to validate endpoint functionality and ensure data integrity.
- Used **GitHub Actions** for continuous integration and deployment (CI/CD), automating code testing and deployment pipelines.
- Performed **manual UI testing** to ensure a seamless user experience, addressing bugs and enhancing performance.

## Key Outcomes and Impact

- Developed a **fully functional full-stack application** for managing travel bookings and trip packages.
- Enhanced user experience with a **single-page application (SPA)** that delivers fast, responsive interactions.
- Ensured data integrity and security through **JWT-based authentication** and **MongoDB database integration**.
- Improved project efficiency with **GitHub version control**, **API testing**, and **automated deployment**.