DF Reach

A Visual Guide to the Application Architecture

The 3-Tier Architecture

DF Reach is built on a robust multi-layered architecture, ensuring a clear separation of concerns. This design enhances scalability, maintainability, and security by isolating the user interface, business logic, and data storage.

🖥️ Presentation Layer

The user-facing interface, built with **ReactJS**. It handles all user interactions and renders data, communicating with the backend via REST APIs.

⚙️ Application Layer

The core of the application, built with **Node.js & Express.js**. It processes business logic, handles authentication, and serves as the bridge to the database.

🗂️ Data Layer

The persistence layer, using a **MySQL** database. It is responsible for the secure storage, retrieval, and integrity of all application data.

User Roles & Page Access

The application provides distinct roles with specific permissions, ensuring users only access the pages relevant to their responsibilities. This section outlines the page access for each role.

PAGE	FIELD FACILITATOR	MANAGER	ADMIN
Dashboard	✔️	✔️	✔️
Beneficiary	✔️	✖️	✖️
Programs	✔️	✔️	✔️
Analytics	✖️	✔️	✔️
Contact Us	✔️	✔️	✔️
Config Page	✖️	✖️	✔️

Anatomy of a Request

Data flows through the system in a secure and logical sequence. This process ensures that every user action is authenticated, validated, and processed correctly, from the frontend to the database and back.

1. User Interaction (Frontend)
A user performs an action in the ReactJS interface, like submitting a form.

2. API Request (Client to Server)
Axios sends a REST API request with data and a JWT for authentication to the backend.

3. Backend Processing (Application Layer)
Node.js/Express authenticates the JWT, validates the data, and executes business logic.

4. Database Interaction (Data Layer)
The backend performs CRUD operations on the MySQL database to persist or retrieve data.

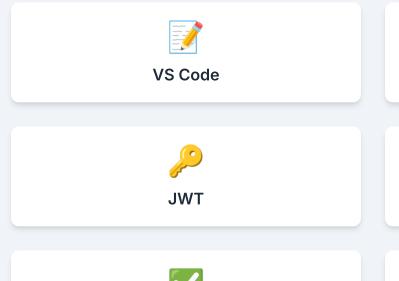**5. API Response (Server to Client)**
The backend sends a JSON response (success or error) back to the frontend.

6. UI Update (Frontend)
ReactJS receives the response and updates the UI, showing a success or error message.
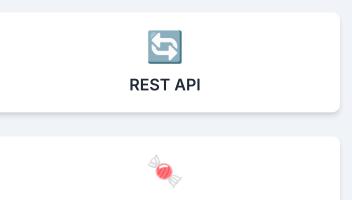
Development Toolkit

A suite of modern and robust technologies powers the DF Reach application, ensuring a high-quality development process and a reliable end product.

📝 VS Code	🔺 Multer	🔁 REST API	🧑 Postman
🔑 JWT	🌐 Axios	🩹 SweetAlert2	✉️ Nodemailer
✅ express-validator	🔒 Bcrypt		