

**MR Product**

**Multilingual Company Registration & Management System**

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## 1. Introduction

The MR Product – Multilingual Company Registration & Management System is a comprehensive web-based platform that enables organizations to register, manage, and update company details in multiple languages. It bridges the gap between global users by supporting 15+ languages, ensuring accessibility and inclusivity.

## 2. System Overview

The system provides a multilingual company registration interface, allowing users to add language-specific data such as company name, owner, address, and description. It integrates React (frontend), Express (backend), and PostgreSQL (database) to deliver a scalable and secure data management solution.

## 3. Key Features

- Multilingual support (English, Arabic, Hindi, French, Spanish, Chinese, Japanese, German, Portuguese, Russian, and more)
- Company profile creation, editing, and deletion
- Real-time search by company name
- Dynamic validation and localized form labels
- File uploads for contracts (PDF, PNG, JPG, JPEG)
- Interactive dashboard displaying all company data
- Configurable Language Settings page

## 4. Technology Stack

Layer	Technology	Description
Frontend	React.js	Handles multilingual forms and validation
Styling	CSS / Tailwind	Provides responsive modern UI
Backend	Node.js (Express)	Manages APIs and data communication
Database	PostgreSQL	Stores structured multilingual data
File Upload	Multer	Handles contract uploads securely
Testing	Postman	Verifies API functionality

## 5. System Design and Flow

1. User selects preferred language in the Language Settings module.
2. The Company Registration form adapts dynamically based on language.
3. User enters data, attaches files, and submits.
4. Backend validates input, stores it in PostgreSQL, and returns confirmation.
5. Company data appears in the dashboard with live search and CRUD operations.

## 6. Database Schema

- companies — Stores company-level general details.
  - company\_id (PK), email, mobile, category, subcategory, discount, comments, contract
- company\_properties — Stores language-specific company data.
  - company\_id (FK), lang\_id (FK), company\_name, owner, address, description
  - Composite PK: (company\_id, lang\_id)
- languages — Stores all supported languages and their metadata.
  - lang\_id (PK), lang\_name, lang\_description\_en, lang\_description\_local

## 7. API Endpoints

GET /api/companies — Fetch all company records  
GET /api/companies/:id — Retrieve specific company  
POST /api/companies — Add new company  
PUT /api/companies/:id — Update company details  
DELETE /api/companies/:id — Delete company  
GET /api/languages — Fetch all languages  
PUT /api/languages/:id — Update language metadata

## 8. Modules and Screens

- Language Settings — Manage default and additional languages.
- Company Registration Form — Add or update company profiles in selected language.
- Company Dashboard — Displays company list, edit/delete options, and search filter.
- Help Section — Provides user documentation and contact information.

## 9. File Upload & Storage

The application uses Multer middleware in Node.js to handle file uploads. Contracts and documents are stored in the '/uploads' directory on the backend. Each file is linked to its corresponding company via the company\_id reference.

## **10. Key Learnings**

- Integrated frontend and backend with REST architecture.
- Managed multilingual data using relational schema.
- Implemented secure file upload system.
- Enhanced UX using dynamic validation and translations.

## **11. Future Enhancements**

- Add user authentication and roles.
- Integrate automatic language detection.
- Enable bulk company uploads via CSV.
- Deploy on AWS or Render with CDN support.

## **12. Conclusion**

The MR Product – Multilingual Company Registration & Management System demonstrates the integration of multilingual capabilities, CRUD operations, and a scalable backend infrastructure. It's designed to support organizations operating in diverse linguistic environments and provides a blueprint for enterprise-level multilingual systems.