TransLingua – Project Demonstration

1 Introduction to Demonstration

The demonstration of TransLingua showcases the working functionality of the multilingual translation web application. It validates the system's architecture, authentication mechanism, translation processing, and database integration.

The demo highlights:

- Secure login system

- Translation functionality

- Role-based access control

- History management

2 Demonstration Environment

Component	Details
Backend	Spring Boot Application
Database	MySQL
Frontend	HTML, CSS, JavaScript
Testing Tool	Postman
Version Control	GitHub

3 Step-by-Step Demonstration Flow

Step 1: User Registration

- User enters username, email, and password.

- System validates input.

- Password is encrypted using BCrypt.

- User data is stored in MySQL database.

✓ Output: Registration Successful Message.

Step 2: User Login

- User enters credentials.

- Backend validates credentials.

- JWT token is generated.

- Token is returned to frontend.

✅ Output: Login Successful + JWT Token generated.

Step 3: Text Translation

- User enters text.

- Selects source and target language.

- Clicks translate.

- Backend processes request.

- Translation result returned.

- Translation saved in database.

✅ Output: Translated text displayed.

Step 4: View Translation History

- Authenticated user requests history.

- System fetches translations linked to user.

- Displays history list.

✅ Output: List of previous translations.

Step 5: Admin Functionality (If Role = ADMIN)

- Admin logs in.

- Admin can view all users.

- Admin can delete users.

✅ Output: User management dashboard.

4️⃣ Architecture Demonstration Flow

User
↓
Frontend (UI)
↓
REST API Call
↓

Spring Boot Controller
↓
Service Layer
↓
Repository Layer
↓
MySQL Database
↓
Response to User

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5 Security Demonstration

During demonstration, explain:

- JWT token generated after login

- Token attached in Authorization header

- Endpoints protected using role-based access

- Unauthorized access returns 403 error

Example:
If user tries to access admin endpoint → Access Denied.

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6 Sample Demo Scenario

Example:

A business user logs in and translates product descriptions from English to Spanish. The translation is saved and can be retrieved later from history. Admin monitors users and manages access.

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7 Key Points to Explain in Viva

- Why JWT is used instead of sessions

- How layered architecture improves maintainability

- How password encryption works

- How REST APIs are structured

- How database relationships are implemented

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8 Conclusion of Demonstration

The demonstration proves that:

- The system is secure

- The application follows clean architecture

- Authentication is properly implemented

- Translation functionality works efficiently

- Data is stored and retrieved successfully