

# Learning Management System (LMS)

## Setup Instructions

### 1. Prerequisites

Before starting, ensure the following tools are installed on your system:

- Visual Studio 2022 (with ASP.NET & Web Development workload)
- .NET SDK 8
- Node.js (LTS version)
- Angular CLI
  - **(npm install -g @angular/cli)**
  - **(ng add @angular/material)**
  - **(npm install @angular/animations)**
  - **(npm install zone.js)**
  - **(in angular.json file → in build add → "polyfills": ["zone.js"],**

```

17   "build": [
18     "builder": "@angular/build:application",
19     "options": {
20       "browser": "src/main.ts",
21       "polyfills": [
22         "zone.js"
23       ],
24       "tsConfig": "tsconfig.app.json",
25     }
26   ]

```

- SQL Server 2019 or higher (Express/Developer/Enterprise Edition)
- Entity Framework Core Tools

### 2. Backend Setup (.NET Web API)

Step 1: Clone the Repository

```
git clone <your-repository-url>
cd LMS.Api.Jan
```

Step 2: Open Backend Project

- Open the solution file (.sln) in **Visual Studio**
- Restore NuGet packages (automatic or via dotnet restore)

Step 3: Configure Database and JWT Settings

- Update the **connection string** in appsettings.json
- Ensure SQL Server is running

### 3.1 Configure Database Connection

```
".ConnectionStrings": {
  "DefaultConnection": "Server=(localdb)\\MSSQLLocalDB;Database=LMS_DB_Jan;Trusted_Connection=True;"},
```

### 3.2 Configure JWT Settings

```
"Jwt": {
  "Key": "THIS_IS_A_VERY_SECURE_256_BIT_JWT_SECRET_KEY_FOR_JAN", "Issuer": "LMS.Api.Jan", "Audience": "LMS.Api.Jan"
}
```

## **Step 3: Apply Migrations & Seed Data**

- Open Package Manager Console
- Run the following commands:

Add-Migration InitialCreate

Update-Database

- Default users, roles (Admin, Instructor, Student) will be seeded from the Data/DatabaseSeeder folder

## **Step 4: Run Backend API**

- Press F5 or run:

dotnet run

- Backend will run on: https://localhost:7234

## **3. Frontend Setup (Angular)**

### Step 1: Navigate to Frontend Folder

cd LMS.Ui.Jan

### Step 2: Install Dependencies

npm install

### Step 3: Configure API Base URL

- Open environment.ts
- Update backend API URL:

```
export const environment = {
  apiUrl: 'https://localhost:7234/api'
};
```

### Step 4: Run Angular Application

ng serve -o

- Frontend will run on: http://localhost:4200

## **4. Application Flow**

- User registers/logs in
- JWT token is generated
- Role-based redirection:
  - **Admin** → User & Course Management
  - **Instructor** → Course & Assignment Management
  - **Student** → Course Enrollment & Learning

## **5. Default Seeded Data**

Role	Email	Password
Admin	admin@lms.com	Admin@123
Instructor	instructor@lms.com	Instructor@123
Student	student@lms.com	Student@123

## **6. Common Issues & Fixes**

- **CORS Error** → Ensure CORS is enabled in Program.cs
- **JWT Unauthorized** → Check token expiration & secret key
- **DB Connection Error** → Verify SQL Server service & connection string