

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",
```

- 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