# EnergeX AI

This Project is composed of:

- **Lumen API (PHP)** – User authentication & posts CRUD with JWT.
- **Node.js Service (TypeScript)** – Redis caching layer for performance.
- **MySQL Database** – Stores users & posts.
- **Redis** – Caches post queries.
- **React Frontend** – Simple UI for login, registration, and posts.
- **Docker Compose** – Orchestrates all services.
- **GitHub Actions** – Automated testing pipeline.

Loom Recording :
https://www.loom.com/share/ea3b5fc685a64cb1816854eb9097c649?sid=da38a412-5dca-4974-917d-ef1cc37cc281

## Setup Instructions

### 1. Clone the repository

https://github.com/Yaswanth-Yash-01/Fullstack-Project-EnergeX.git
cd EnergeX-AI-Hiring-Test

### 2. Environment variables

Backend services has a .env Copy and configure:

**Lumen API:**

```
cp backend/lumen-backend/.env.example backend/lumen-backend/.env
php artisan key:generate
php artisan jwt:secret
```

**Node.js Cache:**

cp backend/node-cache/.env

**Frontend**
I have not included any env file (Because it is just simple frontend)

**Note :** Replace the values above with your own database credentials.

## 3. Run locally (without Docker)

**Lumen**

```
cd backend/lumen-backend
composer install
php artisan migrate
php -S 0.0.0.0:8000 -t public
```

**Node.js Cache**

```
cd backend/node-cache
npm install
npm run build
npm run start
```

**Frontend**

```
cd frontend/reactfrontend
npm install
npm run dev
```

## 4. Run with Docker

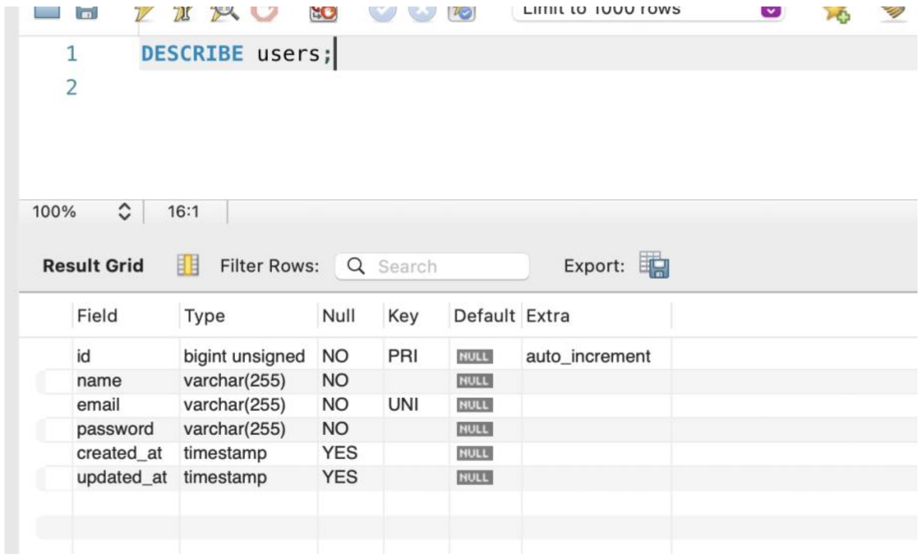
```
docker compose up --build
```

Services:

- **Lumen API** → http://localhost:8000/api
- **Node.js Cache API** → http://localhost:3000/cache/
- **Frontend** → http://localhost:5173

# Database Schema

## Users:



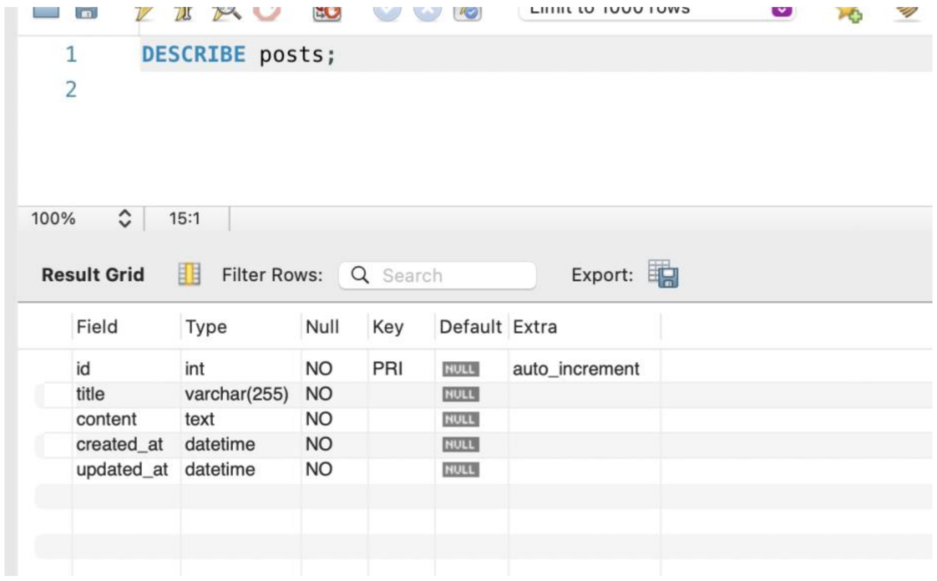
```
DESCRIBE users;
```

100% 16:1

Result Grid Filter Rows: Search Export:

| Field | Type | Null | Key | Default | Extra |
|---|---|---|---|---|---|
| id | bigint unsigned | NO | PRI | NULL | auto_increment |
| name | varchar(255) | NO | | NULL | |
| email | varchar(255) | NO | UNI | NULL | |
| password | varchar(255) | NO | | NULL | |
| created_at | timestamp | YES | | NULL | |
| updated_at | timestamp | YES | | NULL | |

## Posts

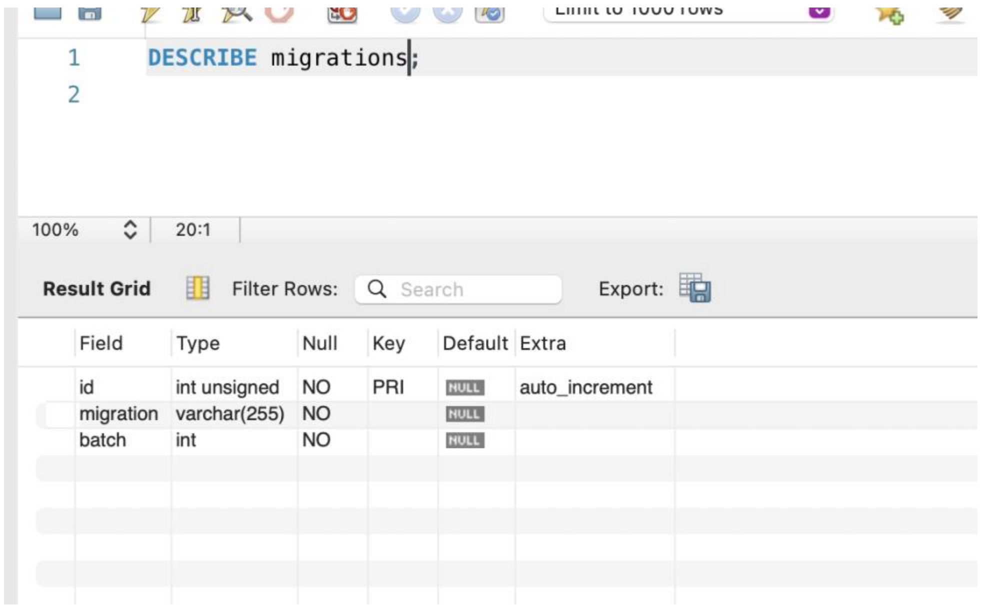


```
DESCRIBE posts;
```

100% 15:1

Result Grid Filter Rows: Search Export:

| Field | Type | Null | Key | Default | Extra |
|---|---|---|---|---|---|
| id | int | NO | PRI | NULL | auto_increment |
| title | varchar(255) | NO | | NULL | |
| content | text | NO | | NULL | |
| created_at | datetime | NO | | NULL | |
| updated_at | datetime | NO | | NULL | |



```
DESCRIBE migrations;
```

| Field | Type | Null | Key | Default | Extra |
|---|---|---|---|---|---|
| id | int unsigned | NO | PRI | NULL | auto_increment |
| migration | varchar(255) | NO | | NULL | |
| batch | int | NO | | NULL | |

## Authentication

POST /api/register → Register user

POST /api/login → Returns JWT token

Include JWT in Authorization: Bearer <token>

## API Endpoints

### Lumen API

| Method | Endpoint | Description |
|---|---|---|
| POST | /api/register | Register user |
| POST | /api/login | Authenticate + JWT token |
| GET | /api/posts | Fetch all posts (cached) |
| POST | /api/posts | Create new post |
| GET | /api/posts/{id} | Fetch single post (cached) |

**Node.js Cache API**

| Method | Endpoint | Description |
|---|---|---|
| GET | /cache/posts | Get cached posts |
| GET | /cache/posts/{id} | Get cached single post |

## Testing

**Lumen**
cd backend/lumen-backend
./vendor/bin/phpunit –testdox

**Node.js**
cd backend/node-cache
npm test

**Frontend**
cd frontend/reactfrontend
npm test
CI runs these automatically on each push (see .github/workflows/ci.yml).