

Yes. Below is a **clean, production-appropriate PostgreSQL version** of the same **Spring Boot + React Employee Management System**, with only the **necessary and correct changes**. The frontend **does not change at all**—only the backend configuration and dependencies do.

I will structure this so you can **directly apply it** without confusion.

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## 1. Backend Changes — PostgreSQL

### 1.1 Maven Dependency (IMPORTANT)

Remove **MySQL** dependency and add **PostgreSQL**.

`pom.xml`

```
<dependency>
  <groupId>org.postgresql</groupId>
  <artifactId>postgresql</artifactId>
  <scope>runtime</scope>
</dependency>
```

You should already have:

```
<dependency>
  <groupId>org.springframework.boot</groupId>
  <artifactId>spring-boot-starter-data-jpa</artifactId>
</dependency>
```

No other database dependencies are required.

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### 1.2 PostgreSQL Database Setup

Create database manually:

```
CREATE DATABASE emsdb;
```

(Optional but recommended)

```
CREATE USER emsuser WITH PASSWORD 'ems123';
GRANT ALL PRIVILEGES ON DATABASE emsdb TO emsuser;
```

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## 1.3 application.properties (PostgreSQL Version)

Replace your existing datasource config with this:

```
# PostgreSQL Configuration
spring.datasource.url=jdbc:postgresql://localhost:5432/emsdb
spring.datasource.username=emsuser
spring.datasource.password=ems123

# JPA / Hibernate
spring.jpa.database-platform=org.hibernate.dialect.PostgreSQLDialect
spring.jpa.hibernate.ddl-auto=update
spring.jpa.show-sql=true
spring.jpa.properties.hibernate.format_sql=true

# Server
server.port=8080
```

If PostgreSQL is running on default port **5432**, no change is needed.

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## 1.4 Entity (NO CHANGE REQUIRED)

Your entity class already works correctly with PostgreSQL.

**Employee.java**

```
@Entity
@Table(name = "employees")
public class Employee {

    @Id
    @GeneratedValue(strategy = GenerationType.IDENTITY)
    private Long id;

    private String firstName;
    private String lastName;

    @Column(unique = true)
    private String email;
}
```

**Note:** GenerationType.IDENTITY works correctly with PostgreSQL.

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## 1.5 Repository (NO CHANGE)

```
public interface EmployeeRepository extends JpaRepository<Employee, Long> {  
}
```

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## 1.6 Controller (NO CHANGE)

Your REST controller remains exactly the same.

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## 2. Frontend — React (NO CHANGES)

PostgreSQL is a **backend concern only**.

Your React code:

- Axios
- Routing
- Components

remain **100% unchanged**.

The frontend still calls:

```
http://localhost:8080/api/employees
```

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## 3. Run Order (IMPORTANT)

### Step 1: Start PostgreSQL

Make sure PostgreSQL service is running.

```
psql -U emsuser -d emsdb
```

### Step 2: Run Backend

```
mvn spring-boot:run
```

Hibernate will automatically create the `employees` table.

### Step 3: Run Frontend

```
npm start
```

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## 4. PostgreSQL Table Auto-Generated by Hibernate

Hibernate will create something equivalent to:

```
CREATE TABLE employees (
    id BIGSERIAL PRIMARY KEY,
    first_name VARCHAR(255),
    last_name VARCHAR(255),
    email VARCHAR(255) UNIQUE
);
```

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## 5. Common PostgreSQL Issues (And Fixes)

✗ **Error: relation "employees" does not exist**

✓ Fix:

```
spring.jpa.hibernate.ddl-auto=update
```

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✗ **Error: FATAL: password authentication failed**

✓ Fix:

- Check username/password
  - Check pg\_hba.conf
  - Restart PostgreSQL
- 

## 6. Final Architecture (Clean)

```
React (Axios)
  |
  | HTTP JSON
  v
Spring Boot REST API
  |
  | JPA / Hibernate
  v
PostgreSQL Database
```

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## 7. Professional Recommendation

If your goal is **industry-ready learning**:

- PostgreSQL > MySQL
  - Spring Boot + React + PostgreSQL is a **standard enterprise stack**
  - This project is **resume-worthy** if documented properly
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If you want, I can next:

1. Add **DTO + Exception Handling**
2. Add **Pagination & Sorting**
3. Add **Docker (Postgres + Spring Boot)**
4. Convert this into a **proper GitHub project structure**

Tell me how far you want to take it.