

HOW TO RUN

1. System Requirements

- **Java Version:** JDK 21 or later (tested on JDK 24)
- **MySQL Version:** 8.0 or higher
- **IDE / Build Tool:** IntelliJ IDEA / Maven project
- **Libraries Used:**
 - mysql-connector-j (for DB connectivity)
 - bcrypt (for password hashing)
 - opencsv and openpdf (for CSV / PDF exports)
 - flatlaf (for improved Swing look-and-feel)

2. Database Setup

There are two separate databases, auth_db and erp_db.

Step 1 - Create and populate Auth DB

1. Open MySQL Workbench or CLI.
2. Run the provided script => auth_db.sql

Step 2 - Create and populate ERP DB

1. Run the provided script => erp_db.sql
(contains students, instructors, courses, sections, enrollments, grades, and settings tables).
2. Verify both databases exist:
SHOW DATABASES;
USE auth_db;
SHOW TABLES;
USE erp_db;
SHOW TABLES;

3. Database Connection Configuration

- **Auth DB Connection:** (edu.univ.erp.data.AuthDatabase):

```
private static final String URL = "jdbc:mysql://localhost:3306/auth_db";  
private static final String USER = "root";  
private static final String PASSWORD = "root123";
```
- **ERP DB Connection:** (edu.univ.erp.data.ERPDatabase):

```
private static final String URL = "jdbc:mysql://localhost:3306/erp_db";
```

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```
private static final String USER = "root";  
private static final String PASSWORD = "root123";
```

Change credentials if your MySQL login differs.

4. Running the Application

1. Open the project in **IntelliJ IDEA** (or Eclipse).
2. Start **MySQL Server**.
3. Verify both databases are created.
4. Build project → Run the main class:
`edu.univ.erp.ui.LoginUI`
5. The **Login Window** appears — log in using credentials below.

| Username | Role | Password |
|----------|------------|----------|
| admin1 | Admin | admin123 |
| inst1 | Instructor | pass123 |
| stu1 | Student 1 | pass123 |
| stu2 | Student 2 | pass123 |

5. Key Notes

- All passwords are stored securely using **bcrypt** hashes in auth_db.
- The ERP enforces role-based access:
 - Students => register/drop/view grades
 - Instructors => grade, compute final, view stats, CSV export/import
 - Admin => manage users, courses, sections, maintenance mode
- **Maintenance Mode:** Students & instructors can view data but not modify it.
- **Bonus Features Implemented:**
 - Password hashing
 - Account lockout (after 5 failed attempts)
 - Change password dialog
 - Notifications system
 - Maintenance (read-only mode)
 - CSV/PDF export
 - Instructor grade import/export
