

Department	Faculty of Information & Communication Technology
Course Name	Object Oriented Programming II
Course Code	BIOP2210
Programs	BSc. in Information Technology BSc. in Software Engineering with Multimedia BSc. In Business Information Technology
Semester	Year 2 Semester 2
Commence Date	Week 12
Deadline Date	Week 16

Project Title:
A Learning Management System

Project Description:

In groups of three(3), you are required to construct a desktop-based Learning Management System (LMS) with PostgreSQL for data management and JavaFX for the graphical user interface. The app's clear, dynamic graphics are intended to improve user interaction, organize courses, and show progress for educational institutions.

Objective:

to create a cutting-edge, interactive Java application that uses GitHub to combine database connectivity, visual effects, version control, and user interface design.

Key Features:

- 1. Menu Bar & Menu Items:** To illustrate JavaFX menus, use a straightforward menu system (such as File > Exit).
- 2. Pagination & ScrollPane:** Add a ScrollPane with a minimum of 20 dummy elements (such as student or course names) arranged vertically. Incorporate a pagination element to mimic flipping between pages.
- 3. Progress Indicators:** Use a Progress Bar and Progress Indicator to display student or course progress.
- 4. Visual Effects:** At least one control (such as a button) should have a DropShadow effect applied. Give a button that continuously fades in and out a FadeTransition effect.
- 5. PostgreSQL Connection:** To retrieve and change data, connect the application to a PostgreSQL database via JDBC.
- 6. Exception Handling:** To manage possible runtime and SQL exceptions, use try-catch blocks.
- 7. GitHub Integration:** Push the project to GitHub after creating a Git repository. The repository link should be included in the documentation.

Use the following technologies:

- **Frontend:** JavaFX
- **Backend:** PostgreSQL
- **Database Driver:** JDBC
- **Build Tool:** Maven / Gradle (*optional*)
- **Version Control:** Git and GitHub

Learning Outcomes:

By completing this project, students will:

- Master JavaFX GUI development.
- Connect Java apps to databases using JDBC.
- Utilize JavaFX animations and effects.
- Improve exception handling skills.
- Use Git and GitHub for version control and collaboration.

Rules and Regulations:

1. Every contribution needs to be unique.
2. Plagiarizing code will result in disqualification.
3. Provide a link to a functional GitHub repository.
4. Make that every database connection is managed carefully and securely.
5. Code needs to be appropriately structured and annotated.
6. Unless an exception is granted, late submissions are penalized 10% each day.
7. Every exception needs to be identified and dealt with skillfully.

Grading Rubric (Total: 100 Marks)

Criteria	Marks
Menu Bar and Menu Items	10
Pagination and ScrollPane	10
Progress Indicators	10
Visual Effects (Fade & DropShadow)	10
PostgreSQL Integration via JDBC	15
GitHub Project Hosting	15
Creativity and User Interface Design	15
Exception Handling	5
Documentation & Code Quality	5
Submission Rules Compliance	5
Total	100