Java Project

Project Overview

This project assesses your ability to apply Core Java, Object-Oriented Programming (OOP), GUI development with Swing, and database integration using JavaDB and PostgreSQL. Belgium Campus has tasked your team with building a BC Student Wellness Management System, which includes:

- *Web-based JSP login* and *registration* system
- *Swing desktop* application for *managing wellness services* such as *appointments*, *counsellors*, and *student* feedback.

You are required to store your project in a GitHub repository to facilitate collaboration and version control. All group members must create GitHub accounts, as this will be demonstrated during the project presentation.

Project Structure

Milestone 1: Web Application – Login & Registration System [Due 14-07-25]

Create a web application that allows students to register and log in to access wellness services.

Requirements

1. **JSP Pages**

   o index.jsp: Home page with links to login.jsp and register.jsp
   o register.jsp: Registration form for new users
   o login.jsp: Login form for existing users
   o dashboard.jsp: Welcome page after login

2. **Servlets**

   o RegisterServlet: Handles registration and stores user data in PostgreSQL
   o LoginServlet: Authenticates users against PostgreSQL

3. **Functional Requirements**

   a. **Registration**
   - Validate all fields (e.g., email format, password strength, phone number format).
   - Check for duplicate usernames or emails in the database.
   - Provide user feedback (e.g., "Registration successful", "Email already exists").
   - Store user data securely (e.g., hashed passwords).

   b. **Login**
   - Validate credentials against the PostgreSQL database.
   - Provide clear error messages for incorrect login attempts.
   - Redirect to dashboard.jsp upon successful login.
   - Maintain session state (e.g., using HttpSession).

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	Assessment:	Project 2025
	Total:	50 Marks

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c. **Dashboard**
- Display a personalized welcome message (e.g., "Welcome, [Student Name]").
- Include a logout button that:
- Invalidates the session.
- Redirects to login.jsp.

d. **Database**
- PostgreSQL schema should include:
  - Users table: student_number, name, surname, email, phone, password
  - Use appropriate constraints (e.g., UNIQUE, NOT NULL)

Total Milestone 1: 20 Marks

Milestone 2: Desktop Application – Wellness Management System [Due 17-07-25]

Develop a desktop application using Java Swing and JavaDB to manage wellness services.

Requirements

1. **Core Java & OOP**

- Use of inheritance, polymorphism, encapsulation, abstraction

- Collections for managing appointments and feedback

- Exception handling

- MVC Architecture of the entire system

2. **GUI with Swing**

- Dashboard with navigation to:

- Appointment Management
- Counselor Management
- Feedback Management

3. **CRUD Operations with JavaDB**

- Tables: Appointments, Counselors, Feedback

- CRUD for:

- Appointments (student, counselor, date, time, status)
- Counselors (name, specialization, availability)
- Feedback (student, rating, comments)

4. Functional Requirements
   a. **Appointments**:
   - Book new appointments (select counselor, date, time)
   - View all upcoming appointments

- Update appointment details (e.g., reschedule)
- Cancel appointments

b. **Counselors:**
- Add new counselors with specialization and availability
- View list of counselors
- Update counselor details
- Remove counselors

c. **Feedback:**
- Submit feedback (rating 1–5, comments)
- View feedback history
- Edit or delete feedback entries

d. **GUI Expectations:**
- Use tabs or menus for navigation
- Input validation (e.g., no empty fields)
- Confirmation dialogs for delete actions
- Error handling (e.g., database connection issues)

Total Milestone 2: 30 Marks

Additional Information

- This is a **group project**.
- Each group must consist of 4 students **(Groups auto created on Moodle)**.
- All group members MUST know all Java Concepts being assessed in the project as all students will be tested on all concepts during the group presentations.
- Belgium Campus utilizes software to detect **plagiarism**, **AI-generated content**, and the use of **paraphrasing tools**. Any student found in violation will receive zero marks for this assignment.
- **Late submissions** will not be accepted. Failure to meet the deadline will result in an automatic **zero**.
- **Marks** are going to be awarded through **Presentation of M1 & M2** on the 18th of July and not through submission.