SEN3004 WEB PROGRAMMING
PROJECT ASSIGNMENT

1. DEFINITION

Create a Spring Boot web application that supports CRUD operations (Create, Read, Update, Delete) for a topic of your choosing. Students have the flexibility to select any relevant subject for the project assignment, aligning it with the specified requirements outlined in Section 4.

2. DEVELOPMENT ENVIRONMENT

Ensure that your assignment submissions are Maven projects compatible with the Spring Tool Suite IDE. If the project cannot be imported into the Spring Tool Suite IDE, grading will not be applied. Utilize an in-memory H2 database for all database-related tasks. Use Thymeleaf for constructing view pages.

3. PROJECT GROUPS

Students should create project groups with two members. If one student leaves the group, the remaining student is responsible for taking on and managing the remaining tasks previously assigned to the departing student.

4. REQUIREMENTS

The application must contain a clean and simple interface that will be used for interacting with users. The following parts must be implemented as mandatory functionalities of the application. You are free to add more functionalities based on your project scope.

a. Data Entry (Input Form)
   - The input form must include at least 5 different input fields.
   - Data types listed below must be used to map the input fields. You can use other data types, but at least the following types must be used:
     - String
     - Date (LocalDate)
     - Number
   - The input form must contain at least one collection (List or array).
   - Bean validation must check for the following conditions for each (applicable) filed:
     - Null / empty values
     - Min / max values
   - At least one custom validation method must be used in the validation process.
     - Custom validation must check for a condition **other than** the equality of two String values.
   - Type conversion and error messages must be displayed within the same input form.
     - Messages must be defined using “messages.properties” file.

b. Result Page
   - The validated values must be displayed on this page.
   - Submitted collection data (list, array, …) must be listed using Thymeleaf’s “th:each” attribute.
   - Date value(s) must be displayed using “dd.MM.yyyy” pattern.
   - A navigation link must exist on this page to go back to the input form.
   - Direct access to the result page from the URL bar must be prevented, it must be accessible only after successful form submission.

c. Database Tasks
   - All submitted and validated values must be saved into an in-memory H2 database.
     - Design a suitable database structure.
     - Create and populate your database using “data.sql” and “schema.sql” files.
   - You must implement a clean way to **view**, **edit,** and **delete** existing data.
     - Create necessary Thymeleaf views.
     - Provide navigation links between views.
     - The same set of validation rules should be applied when editing existing values.
   - You can implement database functions using JDBC or JPA/Hibernate.

d. Internationalization
   - Add a minimum of three language options for viewing your application (e.g., Turkish, English, German).
   - Implement a mechanism that enables users to switch between available languages.

Define and implement all necessary classes and files to support the described functionalities above.

5. PROJECT REPORT

Prepare a project report containing the following parts:

- Briefly explain your topic and state member-task responsibilities.
- Add the database schema diagram of your project.
- Add screenshots for each functionality along with descriptions.

6. IMPORTANT DATES

Submit the following project files before the deadline using the assignment links on Itslearning. Submissions via e-mail or Itslearning messaging system will not be accepted.

a. Creating Project Groups: 8 March 2024 17:30
   - Students should create project groups with **two members**.
   - After this deadline (8 March), random groups will be created for students who do not have a project group.

b. Project Report and Code Submission Deadline (group submission): 17 May 2024 17:30
   - Save your project report in **PDF format**.
   - Export your project as a **ZIP archive**.
   - Name the files with your student IDs. (e.g. 1234567-7654321.pdf, 1234567-7654321.zip)

c. Presentation Submission Deadline (individual submission): 17 May 2024 17:30
   - Record a video presentation about your project (in English).
   - Each group member should present his/her part of the project.
   - Each group member has at most **10 minutes**.
     - Use your time wisely. Focus on the main functionalities.
   - If you do not make your presentation, your project grade **will be zero**. No excuses are accepted.

7. GRADING

Originality will be taken into consideration during project grading. AI-generated content will not be graded. Implementation: 80 pts. Report: 10 pts. Presentation: 10 pts.

8. CHEATING AND PLAGIARISM

Detected cheating and plagiarism are subject to disciplinary action.