ICAE 02
Department of Physical Science
Faculty of Applied Science, University of Vavuniya
Answer All Questions

Duration: 1 hour   **13ᵗʰ June 2025**

Instruction:

- A Spring Boot project was already created; use it to answer the given questions.
- Models and Data are available in the shared derive.
- Once you complete the exam, copy only the models, repo, service, controller and exception handler folders to the Z drive (server).
- Don't copy your files while it is open in the editor.
- Please ensure that you capture screenshots of the outputs for each question.

Scenario:

You're tasked with developing a RESTful API for a library management system that includes three models: Student, Book, and Borrow. Use the provided models and sample data to answer the questions below.

Tasks:

1. Map the models to the database and insert the given data, then display the data in MySQL CMD.
2. Filter the books by their genre.
3. Find the students who borrowed the given book ID.
4. To borrow a book, the library staff should enter the student ID and book ID, but before the borrowing process, validate the following conditions:
   a. Ensure that the student and book IDs are available in the database.
   b. If the student has more than two unreturned books, he/she is not eligible to borrow a new book.
   c. The library should maintain at least one copy available that is not for lending.
   d. When a book is borrowed, decrease the available copy by one.
   e. Return proper error messages when the conditions fail.