

IT2234: Web Service and Server Technologies - Practical
ICAE 03
Department of Physical Science
Faculty of Applied Science, University of Vavuniya
Answer All Questions

Duration: 1 hour

5th June 2025

Instructions:

The Node JS project is available in the shared drive as a ZIP file. Copy it to your local drive and extract it. The project is embedded with the necessary files. After completing your code work, copy the files into the Z drive, **excluding the *node_modules*** folder. 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.

Technology: Node JS, Express, MongoDB, MongoDB Compass, and Mongoose

Editor: VS Code.

Tasks:

1. Map the models to the database and insert the given data, then display the collections in table view.
2. Filter the books by their genre.
3. Filter the students by the year.
4. Use a common function to perform tasks 2 and 3.
5. 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.