

# Indian Institute of Technology, Jodhpur

## CSL7090: Software and Data Engineering

### AY 2021-22 Semester II

### Assignment No. 2

**Due on: March 16, 2022**

**M.M.: 100**

#### General Instructions:

1. Submit a single report depicting the **method, results, and observations** for all the tasks. There is no need to add theory behind the concepts.
2. Put both the commented source codes along with the readme file and the report in a folder named **<SDE\_A2\_YourRollNo>**, create a zip file, and upload in google-classroom.
3. Clearly, mention the assumptions you have made, if any.
4. You are free to use any library/API.
5. Clearly, report any resources you have used while attempting the assignment.
6. Any submission received in another format or after the deadline will not be evaluated.
7. Plagiarized submissions will not be evaluated or awarded with an 'F' grade in the course.

#### Task 1: MongoDB and SQL

**35 Marks**

Using MongoDB, perform the following:

- a) Create a database named 'LibraryDB' and a collection named 'Books', respectively.
- b) Insert at least 10 documents in the newly created collection using the 'insert()' command. Each document should contain the following information:
  - a. ISBN
  - b. Accession No. (12-digit number, that denotes the date and sequence of acquisition, e.g., 88<sup>th</sup> book is acquired on 24-Feb-2022, its Accession No. would be 240220220088)
  - c. Title
  - d. Author
  - e. Publisher
  - f. Edition
  - g. Year of Publication
  - h. Category (Permissible values - Java, Python, DBMS, and C)
  - i. Total Number of Pages
  - j. Price
- c) Write a script to export this MongoDB data and convert it to SQL. Also, your script should be capable of automatically inserting a record into the SQL table as soon as a new MongoDB document is created. Show the working of your script by inserting two new documents in 'LibraryDB'.

**Task 2: Wrapper Script****35 Marks**

- a) Demonstrate how you will maintain referential integrity in a column store database by creating a wrapper script.
- b) Let Accession No. be the primary key in Books, and you have records of readers (Reader Id, Accession No, Issue Date, Return Date). Show how your script is able to maintain One-to-One mapping.

Note: You may use any column store database for this assignment.

**Task 3: API****30 Marks**

Write an API using any framework or programming language to perform face/logo detection. Test your API against [these](#) images.