

# Project Phase 4

## CS4.301 - Data and Applications (Monsoon '23)

Deadline: 2nd December, 2023 (11:59 PM)

This is the final part of the project! Using the previously modeled relational schemas, you must create and populate the database as per your relational schema in MySQL. You must then build a command line interface in Python3 to satisfy the functional requirements specified earlier. This can be done using libraries like PyMySQL.

There are two parts to this project

- **Creating the database:** You have to create your database according to the relational model constructed in phase 3. Please make sure to account for all the constraints (entity, referential, domain, etc.) while creating the database. You have to also load your tables with legitimate values. Each table should contain at least 5 tuples.
- **Performing queries on the database:** You have to implement all the functional requirements that you mentioned in your phase 1 submission. There should be at least 2 queries for each kind of operation (insertion, update, selection, projection) etc. for both modifications and retrievals.

Note: At Least 2 analysis queries (involving the JOIN clause) must be present from the phase 1 submission.

The first part can be done purely using the MySQL CLI. For the second part, you are expected to create a Python script that can connect to the database using MySQL. You may not use built in commands and functions to make queries. In other words, you must write SQL queries to satisfy each of the functional requirements.

A boilerplate with further instructions has been uploaded here: [Instructions](#)

### Submission Instructions:

- The python scripts(s) should be in a folder named "source\_code".
- Attach a video (maximum five minutes) along with the code: The video should be named as <team\_number>.mp4. You must populate your database with legitimate data before starting to record (screen record) the video. While presenting the video, you must have two terminals open. In one terminal, you would be entering commands and in the second

terminal, you would access the database and show the desired change in your SQL tables before and after running the command in the other terminal.

- You must also submit a report with a list of all the commands your code can run along with a small description for each of them. The commands you run in the video must be in the same order that you list in your report. Name the report as <teamnumber>\_report.pdf .
- Attach your Phase 3 report renamed as phase3.pdf.

Zip all of the above mentioned files, and submit the zipped file. Name the zip file as <teamnumber>.zip.

All the best!