**COMP2411 – Database Systems**

Submission Deadline: 1st Stage – 22-OCT-2022 | 2nd Stage – 19-NOV-2022

Weighting: 10% | 20%

**Project Title: Library Management System (LMS)**

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Description of the library management system (LMS) is as follows:

LMS offers a user-friendly way of issuing books and also viewing different books and titles available under a category. You are required to create a Database Application and use SQL queries that enable quick retrieval of the required information.

The library system should have the following features:

1. A book catalogue with search by name, author and category of the books. Note there may be more than one copy of each book, and a book may even be published by different publishers.
2. The ability to deactivate a patron's account if he/she does not return books after a specific period of time passes.
3. Records of books checked out as well as placed on hold (i.e. "reserved" by a patron to make sure the book is there when he/she gets to the library to check it out).
4. Notifications when the desired book becomes available and reminders that a book should be returned to the library. Both could be sent by email and/or when patron logs in to the LMS.
5. Provide analysis report to management to review the system.
   (*Note: You may have your assumptions/suggestions to decide what kind of the analysis report to be generated. For example, to find out the peak hour(s) of the library so that management could arrange enough manpower, etc.*)

**What to do and submit?**

1. You are required to form a group of **FOUR to SIX** (***4 ~ 6***) and confirm a Group Member List on or before **30-SEP-2022** and send the list to Alvin (*alvin.mak@polyu.edu.hk*) through email. In addition, this group project is divided into **TWO** stages.

2. For the **First Stage**, each group should submit the following on or before **22-OCT-2022** (*Saturday*) to the Blackboard:

    a. According to the description of the *Library Management System*, provide an **ER diagram** to define clearly for all necessary entities, for example, which entities are "weak" or "strong" as well as the relationships (*especially the many-to-many relationship and the N-ary relationship*) among the entities.
    (*Note: You should have your assumptions to design your database application*.)
    b. Based on the ER diagram, generate a **relational schema** for the *Library Management System*.
    c. A **project plan** or a **project schedule** should be prepared and submitted.

3. For the **Second Stage**, the following materials are required and submitted to Blackboard on or before **19-NOV-2022** (*Saturday*):

    a. A **Project Report** in Microsoft Word format or PDF format.
    b. A "***User Guide***" to show how to setup and use the application.
    c. **Source code** file(s).
    d. **Testing data** file(s).
    e. A soft copy of the **presentation file**.
    f. Sample(s) of the **analysis report**(s).
    g. A **FIVE minutes** (*at most*) **video demonstration** (*presentation*) which is to introduce and demonstrate your application (*see part 4*).
    h. **Contribution of Work** – A list to indicate/describe the workload of each member. The list should be **signed by all group members** to show your consensus.
    i. **Peer Evaluation Form** – Each member should complete the **Peer Evaluation Form** and submit it to Blackboard.

4. **Demonstration** – Each group should prepare **a task list and testing data** to test their application. The task list and the testing data should be included in the submission. For the video, it is to show how your group complete all the required tasks in brief. For example, how to set up the proper environment, how to **initialize** the application, and so on. In addition, all members should present here, and the length of the video is at most FIVE minutes long. (*Note: A random selection of the group presentation would be introduced for the demonstration. Most likely a "Teams" meeting is to be arranged for that presentation.*)

**Late Submission Penalty – 33% per day.**

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