INTERNATIONAL ISLAMIC UNIVERSITY MALAYSIA
BIIT 1301 DATABASE PROGRAMMING
SEMESTER 1, 2024/2025 SESSION

Project Important Dates

Group Project Assessment	Tasks	Marks	Due Date
	Project Topic		**9/12/24**
1	Task 1 – 5	10%	
2	Task 6 – 8	10%	
3	Task 9 – Web	5%	
4	Presentation	5%	**13/01/2025 – 22/01/2025**
5	Final Report	10%	**22/01/2025**
	Total	**40%**	

Note: Submission links will be provided in iTaleem. The Final Report is a collective report from Task 1 – 9. For **Task 9 you need to do a lot of self-learning.** In the spread sheet where you put your group name, please indicate when you will be able to present your work.

INFO 2303 DATABASE PROGRAMMING
SEMESTER 1, 2024/2025 SESSION
Group Project

IMPORTANT!
Project guidelines and rules are as follows:

1. All students must actively take part in preparing and submitting the project and each group should consist of a maximum of 4 students.
2. It is not guaranteed that every member of a group will have equal marks. Should there be a demonstration of poor contribution and poor communication skills reflected from the report and demonstration, the marks will be adjusted accordingly.
3. **Any group caught plagiarizing and/or outsourcing their work, such act shall result in the award of 0 (zero) marks for the project.**

Below are the tasks details:
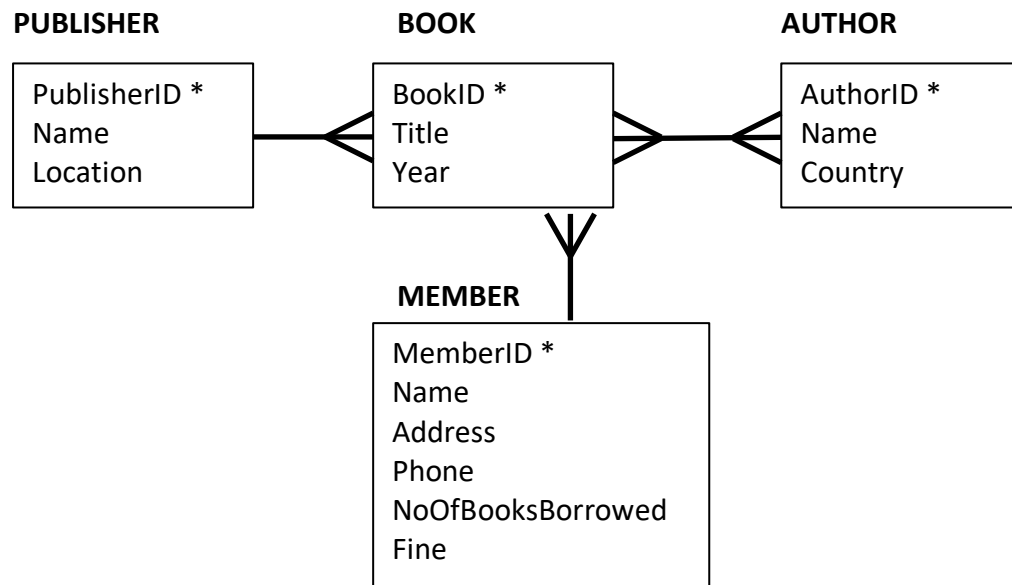
Task 1

Create a scenario that fits your Group Project. For example, if the database project is meant for a private college database, then explain in **one or two paragraphs** the background of the college and why you need to have a database for this private college.

Task 2

Create an Entity Relationship Diagram (ER Diagram) for your project. The ER Diagram must be comprehensive and caters all possible scenarios. For example, a **library database** must have at least the following entities (**4 or more entities – Books, Publisher, Authors, Members**):
Users:
- Student/staff
- Admin

PUBLISHER	BOOK	AUTHOR
PublisherID * Name Location	BookID * Title Year	AuthorID * Name Country

MEMBER

MemberID *
Name
Address
Phone
NoOfBooksBorrowed
Fine

Task 3

Create the data dictionary for the ER diagram. Following the above example, the data dictionary will be as follows:

PUBLISHER

ATTRIBUTE NAME	DATA TYPE	SIZE	NULL
PublisherID	NUMBER	4	NO (PK)
Name	VARCHAR2	30	NO
Location	VARCHAR2	20	YES

BOOK

ATTRIBUTE NAME	DATA TYPE	SIZE	NULL
BookID	NUMBER	4	NO (PK)
Title	VARCHAR2/CHAR	30	NO
Year	DATE		NO

AUTHOR

ATTRIBUTE NAME	DATA TYPE	SIZE	NULL
AuthorID	NUMBER	4	NO (PK)
Name	VARCHAR2	30	NO
Country	VARCHAR2	20	YES

MEMBER

ATTRIBUTE NAME	DATA TYPE	SIZE	NULL
MemberID	NUMBER	4	NO (PK)
Name	VARCHAR2	30	NO
Address	VARCHAR2	50	YES
Phone	NUMBER	10	NO
NoOfBooksBorrowed	NUMBER	4	YES
Fine	NUMBER	4	YES

Task 4

Create all of the required tables needed for this project using the DDL & DML commands. Refer to ER diagram and Data Dictionary for the required structure of the tables and constraints of the new database.

The objective is to ensure that you understand how to read an ER Diagram and to implement the logical design into a physical design, i.e. by using SQL syntax. Do ensure that your script contains the following items:
1. Drop table statements.
2. Create table statements complete with primary key, foreign key and other constraints declarations.

Name your script as *ProjName_table.sql*

Task 5

Write a script to populate the data for the tables. Each table will require **at least 10 rows**. Make sure that you have ample data to make sure that each query in Task 6 will produce some results.

Name the script as *ProjName_data.sql*

Task 6

Write some SQL statements that allow you to query, add, modify and remove some data. In the case of a library database, a member should be able to search (query) for a book(s). A librarian should be able to add, modify and remove books from the library database. Once a book(s) are borrowed, the member will know the return date and there will be late penalties for each late book return.

- List all the books in the library.
- List all the books borrowed by a member of the library.
- Find the fine of a particular member.
- Allow the librarian to add, modify and remove details of the books.
- Allow the librarian to add, modify and remove members of the library.

Task 7

Write a script to create two procedures. For example, a **library database,** the first procedure is to add new books and members.

The second procedure is to retrieve the details of a book given a specified book id.

For the procedures, the scenarios are all up to you. **Bonus marks** will be given for those who used **cursors or any complex programming**.

Task 8

Write a script to create two functions. For example, a **library database,** create a function that calculates how much a member needs to pay for the late fine. If a day late, a library member needs to pay $0.50. If the member is 7 days late, then he/she must pay $3.50.

The second function should be able to calculate the total number of books borrowed by a member of the library.

After creating these functions, call the functions from an anonymous block (See examples from the Functions slides).

For the functions, the scenarios are all up to you such as giving discounts to loyal customers, giving bonus to the employees, etc.

Task 9

Create a web application that can interact with the database. The application should be able to connect, **insert, update and delete** data. It should also be able to **execute the procedures and functions created without any errors**. **Web Apps Example**: Caspio, XAMPP, myPHPAdmin, Trunao, Weebly, HTML, Phyton, Javascript, Wix, APEX etc.

DELIVERABLES:

1. A written report containing the following items:
    a. Script of the following in .TXT or .SQL:
        1. Data dictionary (DDL scripts)
        2. Sample data for each table (at least 10 records in each table)
        3. Queries and return result-sets of the queries
        4. Procedures and Functions
    b. Members' contribution in the project
2. Softcopy of the report that contains all scripts (submit via iTaleem)
3. Demonstrate the database during the designated time.
4. It is **COMPULSOR**Y for all members of the group to be present during the demonstration time. The member who missed the demonstration session without any compelling reason (such as letter from hospital for a critical illness or report from the police station) will receive 0 (zero) mark in this assessment.