Lab 3

Foreign keys and Simple SQL

Objectives:

- How to implement a relation schema on MySQL.
- Express the various data types in MySQL.
- Demonstrate the referential integrity constrains.

Problem Statement 1

Consider the COMPANY relational database schema:

EMPLOYEE (ssn, fname, lname, bdate, address, gender, salary, Dno)

DEPARTMENT (Dnumber, Dname, mgr_ssn, mgr_start_date)

PROJECT (Pnumber, Pname, Plocation, Dno)

Requirements

- Login to **PhpMyAdmin** and implement the given schema using DDL and Insert data in all tables.
- **Answer the following questions:**
  - Insert a row in the DEPARTMENT table that references a row in the EMPLOYEE table. Then try to delete the referenced row. What will happen?
  - Insert a row in the PROJECT table that references a row in the Department that doesn't exist yet. What will happen?
  - If **mgr_ssn** and **Dno** are both NOT NULL, how will you insert the first row in **EMPLOYEE** or **DEPARTMENT**?

SQL snippets will help

```
ALTER TABLE first_table ADD FOREIGN KEY (foreign_key_field_name)
REFERENCES second_table(second_table_primary_key);
```

Problem Statement 2

The following relations shows basic entities of **Library Management System**.
Implement the schema using DDL statements:-

BOOK (book_id, title, price, pub_id, category_id)

CATEGORY (category_id,name)

PUBLISHER (pub_id, name, address)

MEMBER (member_id, name, address, join_date)

BORROWING_BOOK (member_id, book_id, borrow_date,
due_date, return_date)

You can run the sample data insertion queries after creating the DB

Sample Data

SQL Queries:-

1. Write SQL query to retrieve names of members Who Joined the system after 1 September 2000.
2. Write SQL query to retrieve all info of members Who Joined the system between 1 October 1995 and 1 October 2019.
3. Write SQL query to retrieve all info of books with publisher Name “Oxford” or the price between 15 to 20
4. Write SQL query to retrieve book title for books borrowed by Member with name “Scot Reinger”
5. Write an SQL Query to retrieve the names of members who borrowed books in 2019

Deliverable

You should deliver the following **all files must be added in the same folder**:

- Problem 1:
  - DDL scripts for database creation in file called **problem1_DDL.sql**.
  - DML SQL Insert queries to insert at least 3 records in each table in file called **problem1_DML.sql**.
  - SQL query you used to answer the questions above and the output/error if any in file called **problem1_Answers.txt**

- Problem 2:
  - DDL scripts for database creation in file called **problem2_DDL.sql**
  - DML SQL queries you wrote to retrieve data. In file called **problem2_DML.sql**
  - SQL query you used to answer the questions above and the output/error if any in file called **problem2_Answers.txt**

Policies:

- You should work individually.
- If 2 or more copies are discovered, all copies will lose all the marks of year work. Hence, it is better to deliver nothing than delivering a copy.
- Late submission is allowed for one week with 80% of the total mark. No late submission is allowed after that