



## 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 constraints.

### 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 happened?
  - Insert a row in the PROJECT table that references a row in the Department isn't exist yet. What happened?
  - If **mgr\_ssn** and **Dno** are both NOT NULL, what issues you will face to insert the first row in **EMPLOYEE** or **DEPARTMENT**? How did you solve it?

#### SQL snippets will help

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



## Problem Statement 1

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, due_date, return_date)
```

**You can run the sample data insertion queries after creating the DB**  
[sample data](#)

### **SQL Queries:-**

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

### **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\_DLL.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 **problem1\_DLL.sql**
  - DML SQL queries you wrote to retrieve data. In file called **problem2\_DML.sql**



**Policies :**

- Lab submission and discussion will be online, please take the time to prepare for this assignment.
- 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.