**MySQL Labs**

**MySQL (Day1):**

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|  | **Create a database called grades** |
|  | **CREATE database grade;** |
|  | **Create the following tables in the grades database:**  ***courses***  ***course\_id*** *int pk*  *course\_name varchar(100) not null*  *credit\_hour int*  ***students\_courses***  ***course\_id*** *int*  ***student\_id*** *int*  *grade int*  *reg\_date date*  ***students***  ***student\_id*** *int pk*  *student\_name varchar (100) not null*  *email varchar (50)*  *tel varchar (20)* |
|  | **- USE grade;**  **- CREATE TABLE students (**  **student\_id INT PRIMARY KEY,**  **student\_name VARCHAR(100) NOT NULL,**  **email VARCHAR(50),**  **tel VARCHAR(20)**  **);**  **- CREATE TABLE courses (**  **course\_id INT PRIMARY KEY,**  **course\_name VARCHAR(100) NOT NULL,**  **credit\_hour INT**  **);**  **- CREATE TABLE students\_courses (**  **course\_id INT,**  **student\_id INT,**  **grade INT,**  **reg\_date DATE,**  **PRIMARY KEY(course\_id, student\_id),**  **FOREIGN KEY (course\_id) REFERENCES courses(course\_id),**  **FOREIGN KEY (student\_id) REFERENCES students(student\_id)**  **);** |
| **3** | **Modify the students table to allow for longer Student names (150 char)**  **Confirm your modification.** |
|  | **ALTER TABLE students MODIFY student\_name VARCHAR(150) NOT NULL;** |
| **4** | **Add constraint to force unique email for each student** |
|  | **ALTER TABLE students MODIFY email VARCHAR(50) UNIQUE;** |
| **5** | **Get Time, Date, Current user, MySQL Version using prompt?**  **SELECT CURRENT\_TIME(), CURRENT\_DATE(), CURRENT\_USER(), VERSION();** |
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| **6** | **Add gender column for the students table. It holds two value (male or female)** |
|  | **ALTER TABLE students ADD gender ENUM('Male', 'Female');** |
| **7** | **Add birth\_date column for the students table.** |
|  | **ALTER TABLE students ADD birth\_date DATE;** |
| **8** | **Drop the student\_name column and replace it with first name and last name.** |
|  | **- ALTER TABLE students DROP student\_name;**  **- ALTER TABLE students ADD (**  **first\_name VARCHAR(100),**  **last\_name VARCHAR(100)**  **);** |
| **9** | **Insert your friend’s data into the table students.** |
|  | **- INSERT INTO students (**  **student\_id, first\_name, last\_name, email, tel, gender, birth\_date**  **)**  **VALUES (**  **1, 'Mahmoud', 'Ahmed', 'mahmoudahmed@gmail.com', '01203454785',**  **'Male', STR\_TO\_DATE('12/31/1997, '%m/%d/%Y'**  **)**  **);**  **- INSERT INTO students (**  **student\_id, first\_name, last\_name, email, tel, gender, birth\_date**  **)**  **VALUES (**  **2, 'Samah', 'Adel', 'samahadel@gmail.com', '01202321548', 'Female',STR\_TO\_DATE('10/02/1999', '%m/%d/%Y')**  **);**  **- INSERT INTO students ( student\_id, first\_name, last\_name, email, tel, gender, birth\_date) VALUES (3, 'Ahmed', 'Ali', 'ahmedali@gmail.com', '01202563548', 'Male', STR\_TO\_DATE('9/05/1998', '%m/%d/%Y'));**  **- INSERT INTO students ( student\_id, first\_name, last\_name, email, tel, gender, birth\_date) VALUES (4, 'Mahmoud', 'Sayed', 'mahmoudsayed@gmail.com', '01202789548', 'Male', STR\_TO\_DATE('5/12/1995', '%m/%d/%Y'));** |
| **10** | **Create a new table (male\_students) based on students table and fill it with the data of male students** |
|  | **CREATE TABLE male\_students AS (SELECT \* FROM students WHERE gender = 'Male');** |

**Part II**

**Create another database “php”**

**Use php**

**Run Lab Script then answer the following**

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| **1** | **Display all students’ information.** |
|  | **SELECT \* FROM students;** |
| **2** | **Display male students only.** |
|  | **SELECT \* FROM students WHERE gender = 'male';** |
| **3** | **Display the number of female students.** |
|  | **SELECT count(student\_id) AS 'Female Count' FROM students WHERE gender = 'female';** |
| **4** | **Display the students’ data for the students who are born before 1992-10-01.** |
|  | **SELECT \* FROM students WHERE birth\_date < '1992-10-01';**  **OR**  **SELECT \* FROM students WHERE STR\_TO\_DATE(birth\_date, '%Y-%m-%d') < STR\_TO\_DATE('1992-10-01', '%Y-%m-%d');** |
| **5** | **Display the students’ data for the male students who are born before 1991-10-01.** |
|  | **SELECT \* FROM students WHERE STR\_TO\_DATE(birth\_date, '%Y-%m-%d') < STR\_TO\_DATE('1992-10-01', '%Y-%m-%d') AND gender = 'male';** |
| **6** | **Display course\_id and their grades sorted by grades.** |
|  | **SELECT course\_id, grade FROM students\_courses ORDER BY grade;**  **OR**  **SELECT student\_id, course\_id, grade FROM students\_courses ORDER BY grade DESC;** |
| **7** | **Display students’ names that begin with A.** |
|  | **SELECT CONCAT\_WS(' ', first\_name, last\_name) AS 'Student Name' FROM students WHERE first\_name LIKE 'A%';** |
| **8** | **Display the gender, number of males and females.** |
|  | **SELECT gender, COUNT(gender) AS 'Number Of Students' FROM students GROUP BY(gender);** |
| **9** | **Display the repeated first names and their counts if higher than 2.** |
|  | **SELECT first\_name, COUNT(first\_name) AS 'Number Of Repeats' FROM students GROUP BY first\_name;** |
| **10** | **Display the subject with highest grade** |
|  | **SELECT course\_name, MAX(grade) AS 'Highest Grade' FROM courses c, students\_courses sc WHERE c.course\_id = sc.course\_id;** |