**MySQL Labs**

**MySQL (Day1):**

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|  | **Create a database called grades** |
|  | **CREATE DATABASE grades;** |
|  | **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)* |
|  | **CREATE TABLE student(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)**  **///////////////////////////////////////////////////////////////////////////////////**  **CREATE TABLE students\_courses(**  **student\_id int NOT NULL,**  **course\_id int NOT NULL,**  **FOREIGN KEY (student\_id) REFERENCES student(student\_id),**  **FOREIGN KEY (course\_id) REFERENCES courses(course\_id),**  **grade int,**  **reg\_date date**  **);** |
|  |  |
| **3** | **Modify the students table to allow for longer Student names (150 char)**  **Confirm your modification.** |
|  | **ALTER TABLE student MODIFY COLUMN student\_name VARCHAR(150);** |
| **4** | **Add constraint to force unique email for each student** |
|  | **ALTER TABLE student**  **ADD CONSTRAINT student UNIQUE (email);** |
| **5** | **Get Time, Date, Current user, MySQL Version using prompt?** |
|  | SELECT NOW();  SELECT CURDATE();  SELECT USER(); |
| **6** | **Add gender column for the students table. It holds two value (male or female)** |
|  | **alter table Employee**  **GENDER ENUM ('Male', 'Female') NOT NULL** |
| **7** | **Add birth\_date column for the students table.** |
|  | **ALTER TABLE student**  **ADD birth DATE ;** |
| **8** | **Drop the student\_name column and replace it with first name and last name.** |
|  | **ALTER TABLE student DROP student\_name ;**  **///////////////////////////////////////////////////////////////////////////////**  **ALTER TABLE student**  **ADD FIRSTNAME VARCHAR(20),**  **ADD LASTNAME VARCHAR(20);** |
| **9** | **Insert your friend’s data into the table students.** |
|  | **INSERT INTO `student`(`student\_id`, `email`, `tel`, `gender`, `birth`, `FIRSTNAME`, `LASTNAME`) VALUES (6,'nahlawa@gmail.com','0106355337','f','2020-02-03','nagwa','talaat')** |
| **10** | **Create a new table (male\_students) based on students table and fill it with the data of male students** |
|  | **CREATE TABLE male\_students(**  **student\_id int NOT NULL,**  **course\_id int NOT NULL,**  **birth DATE ,**  **FOREIGN KEY (student\_id) REFERENCES student(student\_id),**  **FOREIGN KEY (course\_id) REFERENCES courses(course\_id),**  **grade int,**  **reg\_date date,**  **gender varchar(5)**  **);** |

**Part II**

**Create another database “OS42”**

**Use OS42**

**Run Lab Script then answer the following**

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| **1** | **Display all students’ information.** |
|  | SELECT \* FROM student; |
| **2** | **Display male students only.** |
|  | **SELECT \* FROM `student` WHERE gender='m';** |
| **3** | **Display the number of female students.** |
|  | **SELECT COUNT(\*) FROM student WHERE gender='f';** |
| **4** | **Display the students’ data for the students who are born before 1992-10-01.** |
|  | **SELECT `student\_id`, `email`, `tel`, `gender`, `birth`, `FIRSTNAME`, `LASTNAME` FROM `student` WHERE (birth <'1992-01-01');** |
| **5** | **Display male students who are born before 1991-10-01.** |
|  | **SELECT `student\_id`, `email`, `tel`, `gender`, `birth`, `FIRSTNAME`, `LASTNAME` FROM `student` WHERE birth <'1992-01-01' AND gender='m' ;** |
| **6** | **Display course\_id and their grades sorted by grades.** |
|  | **SELECT `course\_id`, `grade` FROM `students\_courses` ORDER BY grade;** |
| **7** | **Display students’ names that begin with A.** |
|  | **SELECT `FIRSTNAME`, `LASTNAME` As name FROM `student` WHERE FIRSTNAME LIKE 'A%'** |
| **8** | **Display the gender, number of males and females.** |
|  | **SELECT gender, COUNT(student\_id) AS count FROM student GROUP BY gender** |
| **9** | **Display the repeated first names and their counts if higher than 2.** |
|  | **SELECT FIRSTNAME,count(FIRSTNAME) as count**  **FROM student**  **GROUP BY FIRSTNAME**  **HAVING count >= 2;** |
| **10** | **Display the subject with highest grade** |
|  | **SELECT c.course\_name , MAX(grade)**  **FROM courses As c**  **JOIN students\_courses As sc ON sc.student\_id=c.course\_id** |