Assignment 01 DDL

Q1: Login to MySQL and view all databases already present.

```
Enter password: ****
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 8
Server version: 8.4.3 MySQL Community Server - GPL

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owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> show databases
    -> ;
+--------------------+
| Database           |
+--------------------+
| fb_sql             |
| information_schema |
| mysql              |
| performance_schema |
| sys                |
+--------------------+
5 rows in set (0.13 sec)
```

Q2. Write an SQL statement to create a simple table countries including columns country_id,country_name and region_id. After this display the structure of table

```
mysql> create table country
    -> (country_id int(11), country_name varchar(20), regi
on_id int(11));
Query OK, 0 rows affected, 2 warnings (0.11 sec)

mysql> desc country
    -> ;
+--------------+-------------+------+-----+---------+-------+
| Field        | Type        | Null | Key | Default | Extra |
+--------------+-------------+------+-----+---------+-------+
| country_id   | int         | YES  |     | NULL    |       |
| country_name | varchar(20) | YES  |     | NULL    |       |
| region_id    | int         | YES  |     | NULL    |       |
+--------------+-------------+------+-----+---------+-------+
3 rows in set (0.01 sec)

mysql>
```

Q3. Write an SQL statement to create a table named jobs including columns job_id, job_title, min_salary, max_salary and check whether the max_salary amount exceeding the upper limit 25000. Also set job_id as primary key and entering null values for job_title is not allowed.

```
mysql> create table jobs
    -> (job_id int(10) Primary Key,
    -> job_title varchar(20),
    -> min_salary int(10) ,
    -> max_salary int(10) check (max_salary <= 25000)
    -> );
Query OK, 0 rows affected, 3 warnings (0.06 sec)

mysql> desc jobs
    -> ;
+------------+-------------+------+-----+---------+-------+
| Field      | Type        | Null | Key | Default | Extra |
+------------+-------------+------+-----+---------+-------+
| job_id     | int         | NO   | PRI | NULL    |       |
| job_title  | varchar(20) | YES  |     | NULL    |       |
| min_salary | int         | YES  |     | NULL    |       |
| max_salary | int         | YES  |     | NULL    |       |
+------------+-------------+------+-----+---------+-------+
4 rows in set (0.00 sec)

mysql>
```

Q4. Write a SQL statement to create a table named job_histry including columns employee_id, start_date, end_date, job_id and department_id

```
mysql> use fb_sql
Database changed
mysql> CREATE TABLE job_histry (
    ->      employee_id INT,
    ->      start_date DATE,
    ->      end_date DATE,
    ->      job_id INT,
    ->      department_id INT
    -> );
Query OK, 0 rows affected (0.04 sec)
```

```
mysql> desc job_histry;
+---------------+------+------+-----+---------+-------+
| Field         | Type | Null | Key | Default | Extra |
+---------------+------+------+-----+---------+-------+
| employee_id   | int  | YES  |     | NULL    |       |
| start_date    | date | YES  |     | NULL    |       |
| end_date      | date | YES  |     | NULL    |       |
| job_id        | int  | YES  |     | NULL    |       |
| department_id | int  | YES  |     | NULL    |       |
+---------------+------+------+-----+---------+-------+
5 rows in set (0.01 sec)

mysql>
```

Q5. Write an SQL statement to alter a table named countries to make sure that no duplicate data against column country_id will be allowed at the time of insertion.

```
mysql> desc country
    -> ;
+--------------+-------------+------+-----+---------+-------+
| Field        | Type        | Null | Key | Default | Extra |
+--------------+-------------+------+-----+---------+-------+
| country_id   | int         | YES  |     | NULL    |       |
| country_name | varchar(20) | YES  |     | NULL    |       |
| region_id    | int         | YES  |     | NULL    |       |
+--------------+-------------+------+-----+---------+-------+
3 rows in set (0.00 sec)

mysql> alter table ccountry
    -> alter table ccountry
    -> ;
ERROR 1064 (42000): You have an error in your SQL syntax; check the
ble ccountry' at line 2
mysql> alter table country
    -> add primary key(country_id);
Query OK, 0 rows affected (0.08 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> desc country
    -> ;
+--------------+-------------+------+-----+---------+-------+
| Field        | Type        | Null | Key | Default | Extra |
+--------------+-------------+------+-----+---------+-------+
| country_id   | int         | NO   | PRI | NULL    |       |
| country_name | varchar(20) | YES  |     | NULL    |       |
| region_id    | int         | YES  |     | NULL    |       |
+--------------+-------------+------+-----+---------+-------+
3 rows in set (0.00 sec)

mysql>
```

Q6: Write an SQL statement to create a table named jobs including columns job_id, job_title, min_salary and max_salary, and make sure that, the default value for job_title is blank and min_salary is 8000 and max_salary is NULL will be entered automatically at the time of insertion if no value assigned for the specified columns.

```
mysql> CREATE TABLE jobs2 (
    ->        job_id INT PRIMARY KEY,
    ->        job_title VARCHAR(255) DEFAULT '',
    ->        min_salary DECIMAL(10, 2) DEFAULT 8000,
    ->        max_salary DECIMAL(10, 2) DEFAULT NULL
    -> );
Query OK, 0 rows affected (0.04 sec)

mysql> desc jobs2
    -> ;
+------------+---------------+------+-----+---------+-------+
| Field      | Type          | Null | Key | Default | Extra |
+------------+---------------+------+-----+---------+-------+
| job_id     | int           | NO   | PRI | NULL    |       |
| job_title  | varchar(255)  | YES  |     |         |       |
| min_salary | decimal(10,2) | YES  |     | 8000.00 |       |
| max_salary | decimal(10,2) | YES  |     | NULL    |       |
+------------+---------------+------+-----+---------+-------+
4 rows in set (0.00 sec)

mysql>
```

Q7 :

```
mysql> CREATE TABLE departments (
    ->        DEPARTMENT_ID DECIMAL(4,0) NOT NULL DEFAULT 0,
    ->        DEPARTMENT_NAME VARCHAR(30) NOT NULL,
    ->        MANAGER_ID DECIMAL(6,0) NOT NULL DEFAULT 0,
    ->        LOCATION_ID DECIMAL(4,0) DEFAULT NULL,
    ->        PRIMARY KEY (DEPARTMENT_ID, MANAGER_ID)
    -> );
Query OK, 0 rows affected (0.03 sec)

mysql> desc departments
    -> ;
+-----------------+--------------+------+-----+---------+-------+
| Field           | Type         | Null | Key | Default | Extra |
+-----------------+--------------+------+-----+---------+-------+
| DEPARTMENT_ID   | decimal(4,0) | NO   | PRI | 0       |       |
| DEPARTMENT_NAME | varchar(30)  | NO   |     | NULL    |       |
| MANAGER_ID      | decimal(6,0) | NO   | PRI | 0       |       |
| LOCATION_ID     | decimal(4,0) | YES  |     | NULL    |       |
+-----------------+--------------+------+-----+---------+-------+
4 rows in set (0.00 sec)

mysql>
```

Q8

Write an SQL statement to create a table employees including columns employee_id, first_name, last_name, email, phone_number hire_date, job_id, salary, commission, manager_id and department_id and make sure that, the employee_id column does not contain any duplicate value at the time of insertion and the foreign key columns combined by department_id and manager_id columns contain only those unique combination values, which combinations are exists in the departments table.

```
1 row in set (0.00 sec)
       desc departments;
+-----------------+-------------+------+-----+---------+-------+
| Field           | Type        | Null | Key | Default | Extra |
+-----------------+-------------+------+-----+---------+-------+
| DEPARTMENT_ID   | decimal(4,0)| NO   | PRI | 0       |       |
| DEPARTMENT_NAME | varchar(30) | NO   |     | NULL    |       |
| MANAGER_ID      | decimal(6,0)| NO   | PRI | 0       |       |
| LOCATION_ID     | decimal(4,0)| YES  |     | NULL    |       |
+-----------------+-------------+------+-----+---------+-------+
4 rows in set (0.00 sec)

mysql> desc employees;
+---------------+-------------+------+-----+---------+-------+
| Field         | Type        | Null | Key | Default | Extra |
+---------------+-------------+------+-----+---------+-------+
| emp_id        | int         | NO   | PRI | NULL    |       |
| f_name        | varchar(25) | YES  |     | NULL    |       |
| l_name        | varchar(25) | YES  |     | NULL    |       |
| email         | varchar(50) | YES  |     | NULL    |       |
| phone         | int         | YES  |     | NULL    |       |
| hire_date     | date        | YES  |     | NULL    |       |
| salary        | decimal(10,2)| YES |     | NULL    |       |
| commission    | decimal(7,2)| YES  |     | NULL    |       |
| department_id | decimal(4,0)| YES  | MUL | NULL    |       |
| manager_id    | decimal(6,0)| YES  |     | NULL    |       |
+---------------+-------------+------+-----+---------+-------+
10 rows in set (0.00 sec)

mysql> show create table departments;
+-------------+--------------------------------------------------------
-------------------------------------------------------------------------
| Table       | Create Table
-------------------------------------------------------------------------
+-------------+--------------------------------------------------------
-------------------------------------------------------------------------
| departments | CREATE TABLE `departments` (
  `DEPARTMENT_ID` decimal(4,0) NOT NULL DEFAULT '0',
  `DEPARTMENT_NAME` varchar(30) NOT NULL,
  `MANAGER_ID` decimal(6,0) NOT NULL DEFAULT '0',
  `LOCATION_ID` decimal(4,0) DEFAULT NULL,
  PRIMARY KEY (`DEPARTMENT_ID`,`MANAGER_ID`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4 COLLATE=utf8mb4_0900_ai_ci |
+-------------+--------------------------------------------------------
-------------------------------------------------------------------------
1 row in set (0.00 sec)
```

```
mysql> show create table employees;
+-----------+-----------------------------------------------------------------------------------------------------
---------------------------------------------------------------------------------------------------------------
---------------------------------------------------------------------------------------------------------------
-----------------------------------------------------+
| Table     | Create Table

                                                                                                              |
+-----------+-----------------------------------------------------------------------------------------------------
---------------------------------------------------------------------------------------------------------------
---------------------------------------------------------------------------------------------------------------
-----------------------------------------------------+
| employees | CREATE TABLE `employees` (
  `emp_id` int NOT NULL,
  `f_name` varchar(25) DEFAULT NULL,
  `l_name` varchar(25) DEFAULT NULL,
  `email` varchar(50) DEFAULT NULL,
  `phone` int DEFAULT NULL,
  `hire_date` date DEFAULT NULL,
  `salary` decimal(10,2) DEFAULT NULL,
  `commission` decimal(7,2) DEFAULT NULL,
  `department_id` decimal(4,0) DEFAULT NULL,
  `manager_id` decimal(6,0) DEFAULT NULL,
  PRIMARY KEY (`emp_id`),
  KEY `department_id` (`department_id`,`manager_id`),
  CONSTRAINT `employees_ibfk_1` FOREIGN KEY (`department_id`, `manager_id`) REFERENCES `departments` (`DEPARTMENT_ID`, `MANAGER_ID`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4 COLLATE=utf8mb4_0900_ai_ci |
+-----------+-----------------------------------------------------------------------------------------------------
---------------------------------------------------------------------------------------------------------------
---------------------------------------------------------------------------------------------------------------
-----------------------------------------------------+
1 row in set (0.00 sec)

mysql>
```

```
mysql> create table
    -> employees
    -> ( emp_id int primary key,
    -> f_name varchar(25),
    -> l_name varchar(25),
    -> email varchar(50),
    -> phone int(10),
    -> hire_date date,
    -> salary decimal(10,2),
    -> commission decimal(7,2),
    -> department_id decimal(4,0),
    -> manager_id decimal(6,0),
    -> foreign key (department_id , manager_id)
    -> references departments(department_id, manager_id));
Query OK, 0 rows affected, 1 warning (0.14 sec)
```