MySQL Assignment -1 (DDL)

1. Login to MySQL and view all databases already present. You should get following result :

```
mysql> create database assignment1;
Query OK, 1 row affected (0.03 sec)

mysql> show databases;
+--------------------+
| Database           |
+--------------------+
| assignment1        |
| db1                |
| db2                |
| db3                |
| demo               |
| information_schema |
| mysql              |
| newdb              |
| performance_schema |
| student            |
| sys                |
+--------------------+
11 rows in set (0.02 sec)
```

2. 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 as below :

```
mysql> use assignment1;
Database changed
mysql> create table country
    -> (country_id int,country_name varchar(20),region_id int);
Query OK, 0 rows affected (0.09 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)
```

3. 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 primary key,job_title varchar(20) not null,min_salary int,
    -> max_salary int check(max_salary<=25000));
Query OK, 0 rows affected (0.07 sec)
```

4. 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> create table job_history
    -> (employee_id int,start_date date,end_date date,job_id int,department_id int);
Query OK, 0 rows affected (0.06 sec)

mysql> desc job_history;
+---------------+------+------+-----+---------+-------+
| 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 (0.00 sec)
```

5. 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> alter table country
    -> add constraint country_id unique(country_id);
Query OK, 0 rows affected (0.05 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

6. 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 jobs1
    -> (job_id int,
    -> job_title varchar(30) default '',
    -> min_salary int default 8000,
    -> max_salary int default NULL);
Query OK, 0 rows affected (0.11 sec)
mysql> insert into jobs1
    -> (job_id)values(1);
Query OK, 1 row affected (0.01 sec)
mysql> table jobs1;
+--------+-----------+------------+------------+
| job_id | job_title | min_salary | max_salary |
+--------+-----------+------------+------------+
|      1 |           |       8000 |       NULL |
+--------+-----------+------------+------------+
1 row in set (0.00 sec)
```

7. Create a Department table with following structure

```
+-----------------+--------------+------+-----+---------+-------+
| 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    |       |
+-----------------+--------------+------+-----+---------+-------+
```

```
mysql> CREATE TABLE department (
    ->     d_id DECIMAL(4,0) PRIMARY KEY,
    ->     manager_id DECIMAL(6,0),
    ->     d_name VARCHAR(30)
    -> );
Query OK, 0 rows affected (0.07 sec)

mysql> CREATE TABLE employee (
    ->     e_id DECIMAL(4,0) PRIMARY KEY,
    ->     e_name VARCHAR(30),
    ->     d_id DECIMAL(4,0),
    ->     manager_id DECIMAL(6,0),
    ->     FOREIGN KEY(d_id) REFERENCES department(d_id)
    -> );
Query OK, 0 rows affected (0.11 sec)

mysql> desc employee;
+------------+-------------+------+-----+---------+-------+
| Field      | Type        | Null | Key | Default | Extra |
+------------+-------------+------+-----+---------+-------+
| e_id       | decimal(4,0) | NO   | PRI | NULL    |       |
| e_name     | varchar(30)  | YES  |     | NULL    |       |
| d_id       | decimal(4,0) | YES  | MUL | NULL    |       |
| manager_id | decimal(6,0) | YES  |     | NULL    |       |
+------------+-------------+------+-----+---------+-------+
4 rows in set (0.01 sec)
```

8. 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.

```
mysql> CREATE TABLE departments
    -> (department_id DECIMAL(4,0),
    -> department_name VARCHAR(50),
    -> manager_id DECIMAL(6,0),
    -> PRIMARY KEY(department_id, manager_id));
Query OK, 0 rows affected (0.06 sec)
```

```
mysql> CREATE TABLE employees
    -> (employee_id DECIMAL(6,0) PRIMARY KEY,
    -> first_name VARCHAR(30),
    -> last_name VARCHAR(30),
    -> email VARCHAR(50),
    -> phone_number VARCHAR(20),
    -> hire_date DATE,
    -> job_id VARCHAR(10),
    -> salary DECIMAL(10,2),
    ->  commission DECIMAL(5,2),
    ->  manager_id DECIMAL(6,0),
    -> department_id DECIMAL(4,0),
    -> FOREIGN KEY(department_id, manager_id)
    -> REFERENCES departments(department_id, manager_id));
Query OK, 0 rows affected (0.09 sec)

mysql> desc employees;
+---------------+---------------+------+-----+---------+-------+
| Field         | Type          | Null | Key | Default | Extra |
+---------------+---------------+------+-----+---------+-------+
| employee_id   | decimal(6,0)  | NO   | PRI | NULL    |       |
| first_name    | varchar(30)   | YES  |     | NULL    |       |
| last_name     | varchar(30)   | YES  |     | NULL    |       |
| email         | varchar(50)   | YES  |     | NULL    |       |
| phone_number  | varchar(20)   | YES  |     | NULL    |       |
| hire_date     | date          | YES  |     | NULL    |       |
| job_id        | varchar(10)   | YES  |     | NULL    |       |
| salary        | decimal(10,2) | YES  |     | NULL    |       |
| commission    | decimal(5,2)  | YES  |     | NULL    |       |
| manager_id    | decimal(6,0)  | YES  |     | NULL    |       |
| department_id | decimal(4,0)  | YES  | MUL | NULL    |       |
+---------------+---------------+------+-----+---------+-------+
11 rows in set (0.01 sec)
```