SQL

Assignment_1

Q1.

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

following result :

```
mysql> use fbs
Database changed
mysql> show tables
    -> ;
+---------------+
| Tables_in_fbs |
+---------------+
| book          |
| employee      |
| fbs_student   |
+---------------+
```

Q2.

2. Write an SQL statement to create a simple table countries including columns

country_id,country_name and region_id.

ans->

```
mysql> create table countries
    -> (country_id int(11),
    -> country_name varchar(20),
    -> region_id int(11));
Query OK, 0 rows affected, 2 warnings (0.05 sec)

mysql> desc countries;
+--------------+-------------+------+-----+---------+-------+
```

| Field | Type | Null | Key | Default | Extra |

+--------------+-------------+------+-----+---------+-------+

| country_id | int | YES | | NULL | |

| country_name | varchar(20) | YES | | NULL | |

| region_id | int | YES | | NULL | |

+--------------+-------------+------+-----+---------+-------+

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_histry
   -> (employee_id int,
   -> start_date date,
   -> end_date date,
   -> 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    |       |
| department_id | int  | YES  |     | NULL    |       |
+---------------+------+------+-----+---------+-------+

mysql> alter table job_histry add column job_id int after end_date;
Query OK, 0 rows affected (0.03 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

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

Q5.

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 countries modify column country_id int unique;
Query OK, 0 rows affected (0.04 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> desc countries;
+--------------+-------------+------+-----+---------+-------+
| Field        | Type        | Null | Key | Default | Extra |
+--------------+-------------+------+-----+---------+-------+
| country_id   | int         | YES  | UNI | NULL    |       |
| country_name | varchar(20) | YES  |     | NULL    |       |
| region_id    | int         | YES  |     | NULL    |       |
+--------------+-------------+------+-----+---------+-------+
```

Q7;

7. Create a Department table with following structure

ans==->

```
mysql> create table Department
    -> (department_id decimal(4,0),
    -> department_name varchar(30),
    -> manager_id decimal(6,0),
    -> location_id decimal(4,0) not null,
    -> primary key(department_id,manager_id));
Query OK, 0 rows affected (0.03 sec)

mysql> desc department;
+----------------+--------------+------+-----+---------+-------+
| Field          | Type         | Null | Key | Default | Extra |
+----------------+--------------+------+-----+---------+-------+
| department_id   | decimal(4,0) | NO   | PRI | NULL    |       |
| department_name | varchar(30)  | YES  |     | NULL    |       |
| manager_id      | decimal(6,0) | NO   | PRI | NULL    |       |
| location_id     | decimal(4,0) | NO   |     | NULL    |       |
+----------------+--------------+------+-----+---------+-------+
4 rows in set (0.00 sec)

mysql> alter table department modify column location_id decimal(4,0);
Query OK, 0 rows affected (0.04 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> desc department;
+----------------+--------------+------+-----+---------+-------+
| Field          | Type         | Null | Key | Default | Extra |
+----------------+--------------+------+-----+---------+-------+
| department_id   | decimal(4,0) | NO   | PRI | NULL    |       |
| department_name | varchar(30)  | YES  |     | NULL    |       |
| manager_id      | decimal(6,0) | NO   | PRI | NULL    |       |
| location_id     | decimal(4,0) | YES  |     | NULL    |       |
```

```
+-----------------+--------------+------+-----+---------+-------+
```

4 rows in set (0.00 sec)

```
mysql> alter table department modify column department_name varchar(30) not null default
"NULL";
```

Query OK, 0 rows affected (0.05 sec)

Records: 0 Duplicates: 0 Warnings: 0

```
mysql> desc department;
+-----------------+--------------+------+-----+---------+-------+
| Field           | Type         | Null | Key | Default | Extra |
+-----------------+--------------+------+-----+---------+-------+
| department_id   | decimal(4,0) | NO   | PRI | NULL    |       |
| department_name | varchar(30)  | NO   |     | NULL    |       |
| manager_id      | decimal(6,0) | NO   | PRI | NULL    |       |
| location_id     | decimal(4,0) | YES  |     | NULL    |       |
+-----------------+--------------+------+-----+---------+-------+
```

4 rows in set (0.00 sec)

```
mysql> alter table department modify column department_id decimal(4,0) default 0;
```

Query OK, 0 rows affected (0.03 sec)

Records: 0 Duplicates: 0 Warnings: 0

```
mysql> desc department;
+-----------------+--------------+------+-----+---------+-------+
| 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 | NULL    |       |
| location_id     | decimal(4,0) | YES  |     | NULL    |       |
```

```
+----------------+-------------+------+-----+---------+-------+
```

4 rows in set (0.00 sec)

```
mysql> alter table department modify column manager_id decimal(6,0) default 0;
Query OK, 0 rows affected (0.03 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> desc department;
+----------------+-------------+------+-----+---------+-------+
| 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    |       |
+----------------+-------------+------+-----+---------+-------+
```

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> use fbs
Database changed
mysql> create table jobs
    -> (job_id int,
    -> job_title varchar(20),
    -> min_salary int,
    -> max_salary int);
```

```
mysql> alter table jobs
    -> add primary key(job_id);
Query OK, 0 rows affected (0.06 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> alter table jobs
    -> modify column job_title varchar(20) not null,
    -> modify column max_salary int check(max_salary<=25000);
```

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.

ans->

```
mysql> alter table jobs modify column job_title varchar(20) default " ";
Query OK, 0 rows affected (0.04 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> desc jobs;
+------------+-------------+------+-----+---------+-------+
| Field      | Type        | Null | Key | Default | Extra |
+------------+-------------+------+-----+---------+-------+
| job_id     | int         | NO   | PRI | NULL    |       |
| job_title  | varchar(20) | YES  |     |         |       |
| min_salary | int         | YES  |     | NULL    |       |
| max_salary | int         | YES  |     | NULL    |       |
+------------+-------------+------+-----+---------+-------+
4 rows in set (0.00 sec)
mysql> alter table jobs modify column min_salary int default 8000;
```

Query OK, 0 rows affected (0.01 sec)

Records: 0 Duplicates: 0 Warnings: 0

mysql> desc jobs;

```
+------------+-------------+------+-----+---------+-------+
| Field      | Type        | Null | Key | Default | Extra |
+------------+-------------+------+-----+---------+-------+
| job_id     | int         | NO   | PRI | NULL    |       |
| job_title  | varchar(20) | YES  |     |         |       |
| min_salary | int         | YES  |     | 8000    |       |
| max_salary | int         | YES  |     | NULL    |       |
+------------+-------------+------+-----+---------+-------+
```

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

```
mysql> create table emp
    -> (emp_id int,
    -> first_name varchar(20),
    -> last_name varchar(20),
    -> phone_number bigint,
    -> email varchar(30),
    -> hire_date date,
    -> job_id int,
```

```
    -> salary decimal(7,2),
    -> magr_id int,
    -> dept_id int);
Query OK, 0 rows affected (0.04 sec)

mysql> desc department;
+-----------------+--------------+------+-----+---------+-------+
| 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> alter table emp add foreign key(dept_id,magr_id) references
department(department_id,manager_id);
Query OK, 0 rows affected (0.07 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> show create table emp;
+-------+------------------------------------------------------------------------------------------------------------------------
--------------------------------------------------------------------------------------------------------------------------------
--------------------------------------------------------------------------------------------------------------------------------
--------------------------------------------------------------------------------------------------------------------------------
------------------------------------------------------------------------------+
| Table | Create Table

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

```
--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------+
| emp   | CREATE TABLE `emp` (
  `emp_id` int DEFAULT NULL,
  `first_name` varchar(20) DEFAULT NULL,
  `last_name` varchar(20) DEFAULT NULL,
  `phone_number` bigint DEFAULT NULL,
  `email` varchar(30) DEFAULT NULL,
  `hire_date` date DEFAULT NULL,
  `job_id` int DEFAULT NULL,
  `salary` decimal(7,2) DEFAULT NULL,
  `magr_id` decimal(4,0) DEFAULT NULL,
  `dept_id` decimal(4,0) DEFAULT NULL,
  KEY `dept_id` (`dept_id`,`magr_id`),
  CONSTRAINT `emp_ibfk_1` FOREIGN KEY (`dept_id`, `magr_id`) REFERENCES `department` (`department_id`, `manager_id`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4 COLLATE=utf8mb4_0900_ai_ci |
+-------+--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------
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1 row in set (0.00 sec)

mysql>
```