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MYSQL

LAB ACTIVITY - 3

1. Write a SQL statement to rename the table countries to country_new.

```
mysql> create table countries (
  -> country_id int(5) NOT NULL,
  -> country_name varchar(10),
  -> region_id decimal(4,0)
  -> );
Query OK, 0 rows affected, 1 warning (0.04 sec)

mysql> show tables;
+-----+
| Tables_in_s |
+-----+
| countries |
+-----+
1 row in set (0.00 sec)

mysql> desc countries;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| country_id | int | NO | | NULL | |
| country_name | varchar(10) | YES | | NULL | |
| region_id | decimal(4,0) | YES | | NULL | |
+-----+-----+-----+-----+-----+-----+
3 rows in set (0.00 sec)

mysql> alter table countries rename country_new;
Query OK, 0 rows affected (0.03 sec)

mysql> show tables;
+-----+
| Tables_in_s |
+-----+
| country_new |
+-----+
1 row in set (0.00 sec)
```

2. Write a SQL statement to add a column region_id to the table locations.

```
mysql> desc locations;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| location_id | int | NO | | NULL | |
| street_address | varchar(15) | YES | | NULL | |
| postal_code | varchar(8) | YES | | NULL | |
| city | varchar(8) | YES | | NULL | |
| state_province | varchar(5) | YES | | NULL | |
| country_id | decimal(4,0) | YES | | NULL | |
+-----+-----+-----+-----+-----+-----+
6 rows in set (0.00 sec)

mysql> alter table locations add region_id int(5) after state_province;
Query OK, 0 rows affected, 1 warning (0.02 sec)
Records: 0 Duplicates: 0 Warnings: 1

mysql> desc locations;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| location_id | int | NO | | NULL | |
| street_address | varchar(15) | YES | | NULL | |
| postal_code | varchar(8) | YES | | NULL | |
| city | varchar(8) | YES | | NULL | |
| state_province | varchar(5) | YES | | NULL | |
| region_id | int | YES | | NULL | |
| country_id | decimal(4,0) | YES | | NULL | |
+-----+-----+-----+-----+-----+-----+
7 rows in set (0.00 sec)
```

3. Write a SQL statement to add a columns ID as the first column of the table locations.

```
mysql> desc locations;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| location_id | int | NO | | NULL | |
| street_address | varchar(15) | YES | | NULL | |
| postal_code | varchar(8) | YES | | NULL | |
| city | varchar(8) | YES | | NULL | |
| state_province | varchar(5) | YES | | NULL | |
| region_id | int | YES | | NULL | |
| country_id | decimal(4,0) | YES | | NULL | |
+-----+-----+-----+-----+-----+-----+
7 rows in set (0.00 sec)

mysql> alter table locations add ID int(5) FIRST;
Query OK, 0 rows affected, 1 warning (0.01 sec)
Records: 0 Duplicates: 0 Warnings: 1

mysql> DESC locations;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| ID | int | YES | | NULL | |
| location_id | int | NO | | NULL | |
| street_address | varchar(15) | YES | | NULL | |
| postal_code | varchar(8) | YES | | NULL | |
| city | varchar(8) | YES | | NULL | |
| state_province | varchar(5) | YES | | NULL | |
| region_id | int | YES | | NULL | |
| country_id | decimal(4,0) | YES | | NULL | |
+-----+-----+-----+-----+-----+-----+
8 rows in set (0.00 sec)
```

4. Write a SQL statement to add a column `region_id` after `state_province` to the table `locations`.

```
mysql> desc locations;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| location_id | int | NO | | NULL | |
| street_address | varchar(15) | YES | | NULL | |
| postal_code | varchar(8) | YES | | NULL | |
| city | varchar(8) | YES | | NULL | |
| state_province | varchar(5) | YES | | NULL | |
| country_id | decimal(4,0) | YES | | NULL | |
+-----+-----+-----+-----+-----+-----+
6 rows in set (0.00 sec)

mysql> alter table locations add region_id int(5) after state_province;
Query OK, 0 rows affected, 1 warning (0.02 sec)
Records: 0 Duplicates: 0 Warnings: 1

mysql> desc locations;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| location_id | int | NO | | NULL | |
| street_address | varchar(15) | YES | | NULL | |
| postal_code | varchar(8) | YES | | NULL | |
| city | varchar(8) | YES | | NULL | |
| state_province | varchar(5) | YES | | NULL | |
| region_id | int | YES | | NULL | |
| country_id | decimal(4,0) | YES | | NULL | |
+-----+-----+-----+-----+-----+-----+
7 rows in set (0.00 sec)
```

5. Write a SQL statement change the data type of the column `country_id` to integer in the table `locations`.

```
mysql> desc locations;
```

Field	Type	Null	Key	Default	Extra
ID	int	YES		NULL	
location_id	int	NO		NULL	
street_address	varchar(15)	YES		NULL	
postal_code	varchar(8)	YES		NULL	
city	varchar(8)	YES		NULL	
state_province	varchar(5)	YES		NULL	
region_id	int	YES		NULL	
country_id	decimal(4,0)	YES		NULL	

```
8 rows in set (0.00 sec)

mysql> alter table locations modify country_id int(5);
Query OK, 0 rows affected, 1 warning (0.05 sec)
Records: 0 Duplicates: 0 Warnings: 1

mysql> desc locations;
```

Field	Type	Null	Key	Default	Extra
ID	int	YES		NULL	
location_id	int	NO		NULL	
street_address	varchar(15)	YES		NULL	
postal_code	varchar(8)	YES		NULL	
city	varchar(8)	YES		NULL	
state_province	varchar(5)	YES		NULL	
region_id	int	YES		NULL	
country_id	int	YES		NULL	

```
8 rows in set (0.00 sec)
```

6. Write a SQL statement to drop the column city from the table locations.

```
mysql> desc locations;
```

Field	Type	Null	Key	Default	Extra
ID	int	YES		NULL	
location_id	int	NO		NULL	
street_address	varchar(15)	YES		NULL	
postal_code	varchar(8)	YES		NULL	
city	varchar(8)	YES		NULL	
state_province	varchar(5)	YES		NULL	
region_id	int	YES		NULL	
country_id	int	YES		NULL	

```
8 rows in set (0.00 sec)

mysql> alter table locations drop city;
Query OK, 0 rows affected (0.01 sec)
Records: 0 Duplicates: 0 Warnings: 0

mysql> desc locations;
```

Field	Type	Null	Key	Default	Extra
ID	int	YES		NULL	
location_id	int	NO		NULL	
street_address	varchar(15)	YES		NULL	
postal_code	varchar(8)	YES		NULL	
state_province	varchar(5)	YES		NULL	
region_id	int	YES		NULL	
country_id	int	YES		NULL	

```
7 rows in set (0.00 sec)
```

7. Write a SQL statement to change the name of the column state_province to state, keeping the data type and size same.

```
mysql> desc locations;
+-----+-----+-----+-----+-----+-----+
| Field          | Type      | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| ID              | int       | YES  |     | NULL    |       |
| location_id     | int       | NO   |     | NULL    |       |
| street_address  | varchar(15) | YES  |     | NULL    |       |
| postal_code     | varchar(8) | YES  |     | NULL    |       |
| state_province  | varchar(5) | YES  |     | NULL    |       |
| region_id       | int       | YES  |     | NULL    |       |
| country_id      | int       | YES  |     | NULL    |       |
+-----+-----+-----+-----+-----+-----+
7 rows in set (0.00 sec)

mysql> alter table locations drop state_province,ADD state varchar(5) after postal_code;
Query OK, 0 rows affected (0.01 sec)
Records: 0 Duplicates: 0 Warnings: 0

mysql> desc locations;
+-----+-----+-----+-----+-----+-----+
| Field          | Type      | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| ID              | int       | YES  |     | NULL    |       |
| location_id     | int       | NO   |     | NULL    |       |
| street_address  | varchar(15) | YES  |     | NULL    |       |
| postal_code     | varchar(8) | YES  |     | NULL    |       |
| state           | varchar(5) | YES  |     | NULL    |       |
| region_id       | int       | YES  |     | NULL    |       |
| country_id      | int       | YES  |     | NULL    |       |
+-----+-----+-----+-----+-----+-----+
7 rows in set (0.00 sec)
```

8. Write a SQL statement to add a primary key for the columns location_id in the locations table.

Here is the sample table employees.

Sample table: employees

```
mysql> desc locations;
```

Field	Type	Null	Key	Default	Extra
ID	int	YES		NULL	
location_id	int	NO		NULL	
street_address	varchar(15)	YES		NULL	
postal_code	varchar(8)	YES		NULL	
state	varchar(5)	YES		NULL	
region_id	int	YES		NULL	
country_id	int	YES		NULL	

```
7 rows in set (0.00 sec)

mysql> alter table locations add primary key(location_id);
Query OK, 0 rows affected (0.05 sec)
Records: 0 Duplicates: 0 Warnings: 0

mysql> desc locations;
```

Field	Type	Null	Key	Default	Extra
ID	int	YES		NULL	
location_id	int	NO	PRI	NULL	
street_address	varchar(15)	YES		NULL	
postal_code	varchar(8)	YES		NULL	
state	varchar(5)	YES		NULL	
region_id	int	YES		NULL	
country_id	int	YES		NULL	

```
7 rows in set (0.00 sec)
```

9. Write a SQL statement to add a primary key for a combination of columns location_id and country_id.

```
mysql> desc locations;
```

Field	Type	Null	Key	Default	Extra
ID	int	YES		NULL	
location_id	int	NO		NULL	
street_address	varchar(15)	YES		NULL	
postal_code	varchar(8)	YES		NULL	
state	varchar(5)	YES		NULL	
region_id	int	YES		NULL	
country_id	int	YES		NULL	

```
7 rows in set (0.00 sec)
```

```
mysql> alter table locations add primary key(location_id,country_id);
Query OK, 0 rows affected (0.17 sec)
Records: 0 Duplicates: 0 Warnings: 0
```

```
mysql> desc locations;
```

Field	Type	Null	Key	Default	Extra
ID	int	YES		NULL	
location_id	int	NO	PRI	NULL	
street_address	varchar(15)	YES		NULL	
postal_code	varchar(8)	YES		NULL	
state	varchar(5)	YES		NULL	
region_id	int	YES		NULL	
country_id	int	NO	PRI	NULL	

```
7 rows in set (0.00 sec)
```

10. Write a SQL statement to drop the existing primary from the table locations on a combination of columns location_id and country_id.

```
mysql> desc locations;
```

Field	Type	Null	Key	Default	Extra
ID	int	YES		NULL	
location_id	int	NO	PRI	NULL	
street_address	varchar(15)	YES		NULL	
postal_code	varchar(8)	YES		NULL	
state	varchar(5)	YES		NULL	
region_id	int	YES		NULL	
country_id	int	NO	PRI	NULL	

```
7 rows in set (0.00 sec)

mysql> alter table locations drop primary key;
Query OK, 0 rows affected (0.06 sec)
Records: 0 Duplicates: 0 Warnings: 0

mysql> desc locations;
```

Field	Type	Null	Key	Default	Extra
ID	int	YES		NULL	
location_id	int	NO		NULL	
street_address	varchar(15)	YES		NULL	
postal_code	varchar(8)	YES		NULL	
state	varchar(5)	YES		NULL	
region_id	int	YES		NULL	
country_id	int	NO		NULL	

```
7 rows in set (0.00 sec)
```

11. Write a SQL statement to add a foreign key on job_id column of job_history table referencing to the primary key job_id of jobs table.


```
mysql> desc job_history
-> ;
```

Field	Type	Null	Key	Default	Extra
employee_id	int	NO		NULL	
start_date	date	YES		NULL	
hire_date	date	YES		NULL	
job_id	int	NO		NULL	
department_id	int	NO		NULL	

5 rows in set (0.00 sec)

```
mysql> desc jobs;
```

Field	Type	Null	Key	Default	Extra
job_id	int	NO	PRI	NULL	
job_title	varchar(35)	NO		NULL	
min_salary	decimal(6,0)	YES		NULL	
max_salary	decimal(6,0)	YES		NULL	

4 rows in set (0.00 sec)

```
mysql> alter table job_history add foreign key(job_id) REFERENCES jobs(job_id);
Query OK, 0 rows affected (0.07 sec)
Records: 0 Duplicates: 0 Warnings: 0
```

```
mysql> desc job_history;
```

Field	Type	Null	Key	Default	Extra
employee_id	int	NO		NULL	
start_date	date	YES		NULL	
hire_date	date	YES		NULL	
job_id	int	NO	MUL	NULL	
department_id	int	NO		NULL	

5 rows in set (0.00 sec)

12. Write a SQL statement to add a foreign key constraint named `fk_job_id` on `job_id` column of `job_history` table referencing to the primary key `job_id` of `jobs` table.

```
mysql> alter table job_history add constraint fk_job_id foreign key(job_id) REFERENCES jobs(job_id) ON UPDATE RESTRICT ON DELETE CASCADE;
Query OK, 0 rows affected (0.07 sec)
Records: 0 Duplicates: 0 Warnings: 0
```

```
mysql> desc job_history;
```

Field	Type	Null	Key	Default	Extra
employee_id	int	NO		NULL	
start_date	date	YES		NULL	
hire_date	date	YES		NULL	
job_id	int	NO	MUL	NULL	
department_id	int	NO		NULL	

5 rows in set (0.00 sec)

```
mysql> show index from job_history;
```

Table	Non_unique	Key_name	Seq_in_index	Column_name	Collation	Cardinality	Sub_part	Packed	Null	Index_type	Comment	Index_comment	Visible
job_history	1	fk_job_id	1	job_id	A	0			NULL	BTREE			YES

1 row in set (0.01 sec)

13. Write a SQL statement to drop the existing foreign key `fk_job_id` from `job_history` table on `job_id` column which is referencing to the `job_id` of `jobs` table.

```
mysql> alter table job_history drop foreign key fk_job_id;
Query OK, 0 rows affected (0.01 sec)
Records: 0 Duplicates: 0 Warnings: 0

mysql> show index from job_history;
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| Table | Non_unique | Key_name | Seq_in_index | Column_name | Collation | Cardinality | Sub_part | Packed | Null | Index_type | Comment | Index_comment | Visible |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| job_history | 1 | fk_job_id | 1 | job_id | A | 0 | NULL | NULL | NULL | BTREE | | | YES |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
1 row in set (0.00 sec)

mysql> desc job_history;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| employee_id | int | NO | | NULL | |
| start_date | date | YES | | NULL | |
| hire_date | date | YES | | NULL | |
| job_id | int | NO | MUL | NULL | |
| department_id | int | NO | | NULL | |
+-----+-----+-----+-----+-----+-----+
5 rows in set (0.00 sec)

mysql> show index from jobs;
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| Table | Non_unique | Key_name | Seq_in_index | Column_name | Collation | Cardinality | Sub_part | Packed | Null | Index_type | Comment | Index_comment | Visible | Exp |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| jobs | 0 | PRIMARY | 1 | job_id | A | 0 | NULL | NULL | NULL | BTREE | | | YES | NUL |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
1 row in set (0.01 sec)
```

14. Write a SQL statement to add an index named `indx_job_id` on `job_id` column in the table `job_history`.

