

# Data Centric Web Applications

## Lab 2 MySQL Review II

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## Part 1

- Get `salespersonsDB2P1.sql` from Moodle.
- Import it into MySQL described in Lab 1.

### Question 1.1

Use the `show create table <table name>` command to find out the structure of the `salesperson_table`, and list the Primary Key(s) and Foreign Key(s).

### Question 1.2

Use the `show create table <table name>` command to find out the structure of the `salesperson_city_table`, and list the Primary Key(s) and Foreign Key(s).

### Question 1.3

Delete salesman S102 from the `salesperson_table`.  
What happens and why?

### Question 1.4

Delete salesman S106 from the `salesperson_table`.  
What happens and why?

### Question 1.5

Insert a new salesman in the *salesman\_table* as follows:  
`sid = 'S107'`  
`fname = 'Tom'`  
`surname = 'Wilson'`  
`dob = 1966-07-12`

### Question 1.6

Insert a new salesman in the *salesman\_table* as follows:  
`sid = 'S108'`  
`fname = 'Pat'`  
`surname = 'O'Hara'`  
`dob = 1966-07-12`

### Question 1.7

Delete the salesperson\_city\_table as follows:

```
mysql> DROP TABLE salesperson_city_table;  
Query OK, 0 rows affected (0.01 sec)
```

and create a new table called *city\_table* as follows:

```
mysql> CREATE TABLE city_table (  
  -> cid VARCHAR(3),  
  -> name VARCHAR(20),  
  -> state VARCHAR(2),  
  -> PRIMARY KEY (cid))  
  -> Engine=InnoDB CHARSET=latin1;  
Query OK, 0 rows affected (0.06 sec)
```

Populate it with the following data:

cid	name	state
ATL	Atlanta	GA
BOS	Boston	MA
DAL	Dallas	TX
HOU	Houston	TX
LA	Los Angeles	CA
NY	New York	NY

### Question 1.8

Recreate the salesperson\_city\_table, this time with two columns:

- *sid* VARCHAR(20) which is a Foreign Key referring to the *sid* column in the salesperson\_table.
- *cid* VARCHAR(3) which is a Foreign Key referring to the *cid* column in the city\_table.  
**HINT:** A Foreign Key is created using the following syntax:  
**Foreign Key(column) References table\_name (column\_in\_referenced\_table).**
- *commission* DOUBLE(4,2)
- Primary Key is (*sid*, *cid*)
- **NOTE:** Make sure that Engine=InnoDB and charset=latin1 as shown in the previous question.

### Question 1.9

Populate the `salesperson_city_table` so that the following are associated:

salesperson	city	commission
Tom Smith	Boston	4.10
Tom Smith	New York	5.20
Betty Jones	Boston	3.20
Mick Clark	Dallas	3.09
Anne Collins	Dallas	NULL
Jim Flynn	Atlanta	3.23
Jim Flynn	Boston	NULL
Chloe Smyth	Boston	5.13

### Question 1.10

Delete *Houston* from the `city_table`.  
What happens and why?

### Question 1.11

Delete *Boston* from the `city_table`.  
What happens and why?

### Question 1.12

Remove the Foreign Key constraint to the `city_table` from the `salesperson_city_table` as follows:

```
mysql> ALTER TABLE salesperson_city_table
-> DROP FOREIGN KEY salesperson_city_table_ibfk_2;
Query OK, 0 rows affected (0.03 sec)
Records: 0 Duplicates: 0 Warnings: 0
```

**NOTE:** The `salesperson_city_table_ibfk_2` refers to the name of the Foreign Key constraint in the `salesperson_city_table` and can be found by using the `SHOW CREATE TABLE` command.

Create a new Foreign Key constraint on the `salesperson_city_table` to `city_table` as follows:

```
mysql> ALTER TABLE salesperson_city_table
-> ADD CONSTRAINT cid fk
-> FOREIGN KEY (cid) REFERENCES city_table(cid) ON DELETE CASCADE;
Query OK, 8 rows affected (0.13 sec)
Records: 8 Duplicates: 0 Warnings: 0
```

### Question 1.13

Delete *Boston* from the *city\_table*.  
What happens and why?

## Part 2

- Get `salespersonsDB2P2.sql` from Moodle.
- Import it into MySQL described in Lab 1.

### Question 2.1

Show the *fname*, *surname*, *salary* and a column entitled *Band* for each salesperson.

The *Band* column should contain "High" if the salesperson's salary > 50,000 otherwise it should contain nothing.

### Question 2.2

Show the *fname*, *surname*, *dob* and a column entitled *Week Part* for each salesperson.

The *Week Part* column should contain "Yes" if the salesperson was born on the weekend, otherwise "NO".

### Question 2.3

Show the *sid*, *cid*, *commission* and a column entitled *Review* for each salesperson.

The *Review* column should contain "Review" if the salesperson's commission in Boston is greater than 4.0.

### Question 2.4

Show all details and a column entitled *Season* for each salesperson.

The *Season* column should contain:

- "Spring" if the salesperson was born in February, March, or April
- "Summer" if the salesperson was born in May, June, or July
- "Autumn" if the salesperson was born in August, September, or October
- "Winter" if the salesperson was born in November, December, or January

### Question 2.5

Show the *fname*, *surname*, *salary* and a column entitled *Salary Scope* for each salesperson.

The *Salary Scope* column should contain:

- "40K" if salesperson's salary is 40,000.00 to 49999.99
- "50K" if salesperson's salary is 50,000.00 to 59999.99
- "60K" if salesperson's salary is 60,000.00 to 69999.99
- "Out of range" otherwise