# Data Centric RAD

## Lab 3 MySQL Review II

* Get superheroes\_wk3.sql from Moodle.
* Import it into MySQL described in Lab 1.

cd \wamp64\bin\mysql\mysql5.7.14\bin

mysql -u root -p < "C:\Users\martin\Desktop\superheroes\_wk3.sql"

use superheroes;

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

show create table superhero\_table;

* Use the show create table <table name> command to find out the structure of the superhero\_city\_table, and list the Primary Key(s) and Foreign Key(s).

show create table superhero\_city\_table;

* Delete *Spiderman* from the superhero\_table.

What happens and why?

delete from superhero\_table where name like 'Spiderman';

ERROR 1451 (23000): Cannot delete or update a parent row: a foreign key constraint fails (`superheroes`.`superhero\_city\_table`, CONSTRAINT `fk\_name` FOREIGN KEY (`name`) REFERENCES `superhero\_table` (`name`))

It cant delete the row because its being referenced as a FK in another table

(Use Cascade delete to delete across the whole database)(ensures referential integrity)

* Insert a new superhero in the *superhero\_table* as follows:

Name = ‘Joker’

real\_first\_name = ‘John’

real\_surname = ‘Jones’

dob = 1966-07-12

powers = 22

INSERT INTO superhero\_table

(name, real\_first\_name, real\_surname, dob, powers) values('Joker','John','Jones','1996-07-12','22');

* Delete the superhero *Joker* from the *superhero\_table*.

What happens and why?

delete from superhero\_table where name like 'Joker';

Query OK, 1 row affected (0.00 sec)

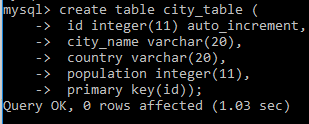
It deletes the row from the table because it is only referenced in the current table.

* Delete the *superhero\_city\_table* as follows:



drop table superhero\_city\_table;

* Create a new table called *city\_table* as follows:



Populate it with the following data:

|  |  |  |
| --- | --- | --- |
| **Name** | **Country** | **Population** |
| Galway | Ireland | 75,000 |
| Gotham City | USA | 15,000,000 |
| Metropolis | USA | 22,250,000 |
| New York | USA | 8,500,000 |
| Springfield | USA | 20,000 |

create table city\_table (

id integer(11) auto\_increment,

city\_name varchar(20),

country varchar(20),

population integer(11),

primary key(id))

engine = InnoDB;

INSERT INTO city\_table

(city\_name, country, population)

values('Galway','Ireland','75000'),

('Gotham City','USA','15000000'),

('Metropolis','USA','2225000'),

('New York','USA','8500000'),

('Springfield','USA','20000');

* Recreate the superhero\_city\_table, this time with two columns:
  + *name* which is a Foreign Key referring to the name column in the superhero\_table.
  + *city* which is a Foreign Key referring to the *id* 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***)**.

* + Primary Key is (name, id)

create table superhero\_city\_table (

name varchar(20),

city Integer(11),

primary key(name, city),

foreign key(name)references superhero\_table(name),

foreign key(city)references city\_table(id))

engine = InnoDB;

How to see what engine being used

show engines;

To change the sql engine of a table after its created use the following

ALTER TABLE superhero\_city\_table ENGINE = InnoDB;

How to set the engine for the session

SET default\_storage\_engine=InnoDB;

* Populate the superhero\_city\_table so that the following are associated:

|  |  |
| --- | --- |
| Spiderman | New York |
| Superman | Metropolis |
| Batman | Gotham City |
| Spiderman | Metropolis |
| Batman | Metropolis |
| Batgirl | Gotham City |
| Radioactiveman | Springfield |

INSERT INTO superhero\_city\_table

(name, city)

values('Spiderman','4'),

('Superman','3'),

('Batman','2'),

('Spiderman','3'),

('Batman','3'),

('Batgirl','2'),

('Radioactiveman','5');

* Delete *Galway* from city\_table.

What happens and why?

delete from city\_table where city\_name like 'Galway';

Query OK, 1 row affected (0.00 sec)

It deletes because the value is only referenced in the current table

* Delete *Metropolis* from city\_table.

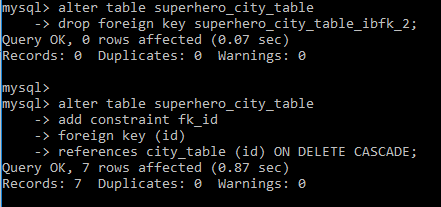
What happens and why?

delete from city\_table where city\_name like 'Metropolis';

ERROR 1451 (23000): Cannot delete or update a parent row: a foreign key constraint fails (`superheroes`.`superhero\_city\_table`, CONSTRAINT `superhero\_city\_table\_ibfk\_2` FOREIGN KEY (`city`) REFERENCES `city\_table` (`id`))

City\_Name value cannot be deleted from the table because it is being used as a FK to refrence another key in another table.

* Alter the city\_table as follows:



alter table superhero\_city\_table

-> drop foreign key superhero\_city\_table\_ibfk\_2;

* Delete *Metropolis* from city\_table.

What happens and why?

delete from city\_table where city\_name like 'Metropolis';

Query OK, 1 row affected (0.01 sec)

The fk ref is removed so now it can be deleted

To create a copy of the database on a file to use on another machine using the windows command line

mysqldump -u root -p > "C:\Users\martin\Desktop\SH\_Wk3.sql.new"