Data Centric RAD

Lab 3 MySQL Review II

- Get `superheroes_wk3.sql` from Moodle.
- Import it into MySQL described in Lab 1.
- `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).
    - CREATE TABLE `superhero_table` (`name` varchar(20) NOT NULL, `real_first_name` varchar(20) DEFAULT NULL, `real_surname` varchar(20) DEFAULT NULL, `dob` date DEFAULT NULL, `powers` double(5,2) DEFAULT '77.88', PRIMARY KEY (`name`)) ENGINE=InnoDB DEFAULT CHARSET=latin1
    - PK: 'name'
    - FK: None
- 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).
    - CREATE TABLE `superhero_city_table` (`name` varchar(20) NOT NULL, `city` varchar(20) NOT NULL, PRIMARY KEY (`name`,`city`), CONSTRAINT `fk_name` FOREIGN KEY (`name`) REFERENCES `superhero_table` (`name`)) ENGINE=InnoDB DEFAULT CHARSET=latin1
    - PK: 'name' + 'city'
    - FK: 'name' (superhero_table)
- Delete *Spiderman* from the superhero_table.
  What happens and why?
    - Not allowed, Referential integrity is ensured. Not orphan child allowed on superhero_city_table
- 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 VALUES ('Joker','John','Jones','1966-07-12',22)

- Delete the superhero *Joker* from the *superhero_table*. What happens and why?
  - delete from superhero_table where name = 'Joker'
  - It is allowed because Joker isn’t refenenced in superhero_city_table

- Delete the *superhero_city_table* as follows:

```
mysql> drop table superhero_city_table;
Query OK, 0 rows affected (0.23 sec)
```

- Create a new table called *city_table* as follows:

```
mysql> create table city_table(
    -> id integer(11) auto_increment,
    -> city_name varchar(200),
    -> country varchar(20),
    -> population integer(11),
    -> primary key(id))
    -> Engine=InnoDB;
Query OK, 0 rows affected (0.11 sec)
```

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

  - INSERT INTO city_table (`city_name`,`Country`,`population`)VALUES (‘Galway',’Ireland’,75000);
  - INSERT INTO city_table (`city_name`,`Country`,`population`)VALUES ('Gotham City','USA',15000000);
  - INSERT INTO city_table (`city_name`,`Country`,`population`)VALUES ('Metropolis','USA',22250000);
  - INSERT INTO city_table (`city_name`,`Country`,`population`)VALUES ('New York','USA',8500000);
  - INSERT INTO city_table (`city_name`,`Country`,`population`)VALUES ('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, city)

- 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

- Delete *Galway* from city_table.
  What happens and why?
    - Allowed - No child reference that Galway record

- Delete *Metropolis* from city_table.
  What happens and why?
    - Not allowed – Record referenced in superhero_city_table

- Alter the city_table as follows:

```
mysql> alter table superhero_city_table
    -> drop foreign key superhero_city_table_ibfk_2;
Query OK, 0 rows affected (0.02 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

```
mysql> alter table superhero_city_table
    -> add constraint fk_id
    -> foreign key (city)
    -> references city_table(id) ON DELETE CASCADE;
Query OK, 7 rows affected (0.14 sec)
Records: 7  Duplicates: 0  Warnings: 0
```

- Delete *Metropolis* from city_table.
  What happens and why?
    - It deletes related records in child table()