SQL Exercise

Sakila

Use the Sakila database on maria - ssh to: mariadb.ict.op.ac.nz, then
connect to the database: mysql -u username -p

1. What is the average replacement cost of a film?

2. Design a query to list the titles of each film and its language_id.

3. List the staff at each store (First name, last name, store number)

4. Design a query to show the number of films in each language.

5. What is wrong with this statement?
   - Perform the query ... does it look ok? What does it mean?

```
SELECT count(*), city
FROM city
GROUP BY country_id;
```

SQLite

Set up a sqlite database

These instructions will take you through the process to create and use a sqlite database
from a supplied .sql file. The short-cut instructions are a - e, more detailed 1-6 :

a) Get a copy of the SQLite shell
b) Extract it into a directory that you're going to work from or one that's in your shell
c) Get a copy of the sql script file for the database
d) Start SQLite, creating the database file
e) Load the .sql file into the database

1. Create a folder on your H: drive h:\sqlite

2. Download a copy of SQLite either from I:\ or sqlite.org and extract it into h:sqlite.
   The executable should be sqlite3.exe

3. Download the pizza database from I:\ into h:\sqlite

4. Open a command prompt and issue these commands. The final command should show both
   sqlite3.exe and pizza.sql in the directory
   - `H:`
   - `cd h:\sqlite`
   - `dir`

We will work with a database called “pizza” which has the following schema

Person (name, age, gender)	name is a key
Frequents (name, pizzeria)	(name, pizzeria) is a joint key
Eats (name, pizza)	(name, pizza) is a joint key
Serves (pizzeria, pizza, price)	(pizzeria, pizza) is a joint key

5. Now create the sqlite database file with:
   - `sqlite3 pizza.sqlite`

6. SQLite, like all DBMS’s, has a number of DBMS specific commands to manage and manipulate databases. Most SQLite specific commands start with a dot.

   Load and confirm the database
   a) Create the database from the script
   b) Check that the tables exist
   c) Check the schema of the tables: person, frequents, eats and serves
   d) Confirm that data is in the tables

   - `.read pizza.sql`
   - `.tables`
   - `.schema Person`
   - `.schema Frequents`
   - `.schema Eats`
   - `.schema Serves`
   - `Select * from Person;`
   - `Select * from Frequents;`
   - `Select * from Eats;`
   - `Select * from Serves;`
   - `.quit`
   - `dir`

   This last command should show that you now have a new file pizza.sqlite. This is the sqlite database file. To access it you issue the command
   - `sqlite3 pizza.sqlite`

Single Table Exercises using Pizza

Working with this database. Note down the query in the space provided. The schema is:

Person (name, age, gender)	name is a key
Frequents (name, pizzeria)	(name, pizzeria) is a joint key
Eats (name, pizza)	(name, pizza) is a joint key
Serves (pizzeria, pizza, price)	(pizzeria, pizza) is a joint key

I recommend you turn headers on and set the column mode for readability, type .help for system commands

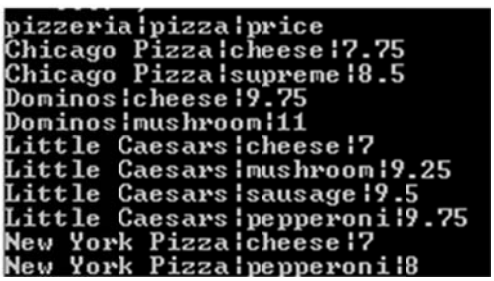
- **.header on**
  .mode column

1. Find all the places that serve pepperoni

2. Display all people sorted by age:

3. Display a list of who eats which pizza by listing the pizza first then the person's name. Sort this list by the pizza names then the person's name

4. Display the prices at the various pizza's by listing the pizzeria, the pizza and the price. Sort by Pizzeria, Price then Pizza



5. What is the average price of a pizza for each pizzeria?

```
pizzeria|avg(price)
Chicago Pizza|8.125
Dominos|10.375
Little Caesars|8.875
New York Pizza|7.83333333
Pizza Hut|11.25
Straw Hat|9.0
```

6. How many people eat cheese pizzas?

```
Number of Cheese Eaters
5
```

7. List all of the pizzeria's with "Pizza" in their name.

```
pizzeria
Chicago Pizza
New York Pizza
Pizza Hut
```

   - Tip: To remove duplicate records use the keyword "distinct" after select.
   - e.g.: `select distinct name from eats;`

8. Find all of the females under 20

```
name|age
Amy|16
```

9. Find all male customers in their 20's showing their name and age, sorted by name.

```
name|age
Ben|21
Gus|24
```

10. Get the maximum, minimum and average price of pizza's in each pizzeria, sort by pizzeria – note the labels in this output

```
pizzeria|MAX|MIN|AVERAGE
Chicago Pizza|8.5|7.75|8.125
Dominos|11|9.75|10.375
Little Caesars|9.75|7|8.875
New York Pizza|8.5|7|7.833333
Pizza Hut|12|9|11.25
Straw Hat|9.75|8|9.0
```