Module: CA218 - Introduction to Databases
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Preamble

Students are expected to attempt all the tasks included in this lab sheet during the allocated laboratory hours. Any question related to the tasks can be directed either to the Lab tutors in its first instance or to the lecturer. The tasks are arranged from simple to medium and complex tasks (colour coded). If you stumble on any of the questions, please proceed to the other questions, while seeking assistance. Do not waste a significant time trying to figure out the solution of one task on the expense of the other tasks.

Lab Sheet-2 Solution [October 4, 2021] [Solution document: available]

(You may use the "`show tables;`" statement to list all relations, "`describe [table]`" to see all the attributes and domains of a table)
SQL statements are highlighted in Blue.

Task 1

Using Sakila database

1. List down all the relations in the database.
   Show tables;

actor
actor_info
address
category
city
country
customer
customer_list
film
film_actor
film_category
film_list
film_text
inventory
language
nicer_but_slower_film_list
payment
rental
sales_by_film_category
sales_by_store
staff
staff_list
store

2. List all the attributes of actor relation.
   Describe actor;

Attribute

actor_id
first_name
last_name
last_update

3. Determine the degree of the customer relation.
   Describe customer;
   There are 9 attributes, therefore customer has degree of 9.

Task 2

Using dreamhome database

1. List all the relations in the database.
   Similar to the above solution
2. List all the attributes of PropertyForRent relation.
   Similar to the above solution

3. Determine the cardinality of the branch relation.
   Branch has 5 tuples, therefore the cardinality is 5
4. Identify the foreign keys of the viewing relation.
   clientNo and propertyNo are foreign keys. Each refers to Client, propertyForRent tables respectively.

5. Identify the foreign keys of the registration relation.
   clientNo, branchNo , and staffNo are the foreighn keys. Each refers to Client, Branch, and Staff tables respectively.

Task 3

Using world database

1. List all the attributes of the city relation.
   Describe City;
   Result: ID, Name, CountryCode, District, Population
2. List the domain of all the attributes in the city relation.
   Describe City;
   Result: ID Int(11), Name Char(35), CountryCode Char(3), District Char(20), Population int(11)
3. Show all the cities.
   To show the cities use
   Select * from city; (will display 4079 rows)

Task 4

Using sakila database

1. Select all information from the actor table. (4 columns, 200 rows)
   Select * from actor;

2. Select all actors whose first name is ‘michael’. (4 columns, 2 rows)
   Select * from actor where first_name ="michael";

3. List all actors whose first name begins with ‘A’. (4 columns, 13 rows)
   Select * from actor where first_name like "A%"; -- this point forward includes advanced SQL topics we will see in future sessions.

4. List out the id and full name of actors whose first name begins with 'A', order by id from highest to lowest. (3 columns, 13 rows)
   Select actor_id, first_name, last_name from actor where first_name like "A%" order by actor_id desc;

5. Return the number of films with the category_id 3. (60)
   Select count(*) from film_category where category_id =3;

The information provided in the bracket after each question will let you quickly check whether your output is correct or not. For example, you will expect the output for Q1 has 4 columns and 200 rows; the output for Q5 is number 60.

NOTE: This information will NOT be provided in the exam.