Multi-Table Queries SQL

CIS 3730

Student -- Jobs

Consider the following relational model for a database to keep track of students applying for full-time jobs.

Job: (JobTitle, description, graduate-degree-required, type, date-posted)
Student: (Panther#, name, email, highest-degree, major)
Applies: (JobTitle, Panther#, date-applied)

Write the SQL to answer the following query.

What are the names of the students who applied for jobs posted on 8 February 2021? (You can assume the date is in any format.)

How many relationships were in the corresponding conceptual model?

Student – Jobs [Solution]

Consider the following relational model for a database to keep track of students applying for full-time jobs.

Job: (JobTitle, description, graduate-degree-required, type, date-posted)
Student: (Panther#, name, email, highest-degree, major)
Applies: (JobTitle, Panther#, date-applied)

What are the names of the students who applied for jobs posted on 8 February 2021? (You can assume the date is in any format.)

Select distinct name [Might have applied for more than one job.]

From student, applies

Where Student.Panther#=Applies.Panther#

And date-applied='08 Feb 2021';

Hotel -- Guests

Hotel: (Hotel-Chain, Hotel#, address, type-of-hotel, animal-friendly)
Guest: (Guest-ID, name, address, passport#, email, phone)
Reservation: (Hotel-Chain, Hotel#, Guest-ID, arrival-date, departure-date, date-of-reservation)

Write a query to list the names of the guests who will be staying in animal-friendly hotels after 1 July 2021.

Hotel – Guests [Solution]

Hotel: (Hotel-Chain, Hotel#, address, type-of-hotel, animal-friendly)
Guest: (Guest-ID, name, address, passport#, email, phone)
Reservation: (Hotel-Chain, Hotel#, Guest-ID, arrival-date, departure-date, date-of-reservation)

Write a query to list the names of the guests who will be staying in animal-friendly hotels after 1 July 2021.

```
Select distinct name
From Guest, Reservation, Hotel
Where Guest.Guest-ID = Reservation.Guest-ID
And Reservation.Hotel-Chain = Hotel.Hotel-Chain
And Reservation.Hotel# = Hotel.hotel#
And animal-friendly = 'y'
And arrival date > 01072021;
```

State what you are retrieving: Guest name (only).
Joining guest-id with reservation will retrieve which guests are arriving after 1 July 2021.
Then, matching that to the key of hotel (hotel-chain, hotel#) enables you to get which of the hotels that have reservations after 1 July 2021 are also animal friendly.

Assume "animal-friendly" can have a value 'y' (yes) or 'no' (no)'.
The hotel has a compound key.

Aggregate functions

The MIN aggregate function calculates the _____ value of all values.

Aggregate function [Solution]

The MIN aggregate function calculates the minimum value of all values.

This is simply a reminder to know these operators.

SQL Statement interpretation

Consider the following SQL statement:

```
Select   C_Name, Hourly_Rate, Expertise_Level
From    Consultant
Where   Hourly_Rate <> 75;
```

What is the best interpretation for this query?

SQL Statement interpretation [Solution]

Consider the following SQL statement:

```
Select   C_Name, Hourly_Rate, Expertise_Level
From    Consultant
Where   Hourly_Rate <> 75;
```

What is the best interpretation for this query?

List the name, hourly rate, and expertise level of consultants whose hourly rate is not $75.00

DDL Interpretation

Recall the DDL Create table statement below. Provide an interpretation of the relation created.

```
Create table Artist (
  artist_ID numeric (4) not null,
  name   varchar2(20) not null,
  DOB    date not null,
  DOD    date,
  CONSTRAINT artist_pk PRIMARY KEY (artist_ID)
);
```

DDL Interpretation [Solution]

Recall the DDL Create table statement below. Provide an interpretation of the relation created.

```
Create table Artist (
  artist_ID numeric (4) not null,
  name   varchar2(20) not null,
  DOB    date not null,
  DOD    date,
  CONSTRAINT artist_pk PRIMARY KEY (artist_ID)
);
```

Artist : (Artist_ID, name, dob, dod)

Artist has unique identifier of Artist_ID and attributes name, date of birth, and date of death.

Product Query

Consider the following query.

```
Select   P_Code, P_Price
From Product
Where  P_Price >= (Select AVG (P_Price) from Product);
```

Provide a business interpretation for this query.

Find the code and price of the products for which the price of the product is greater than or equal to the average price of all products.

Note: This uses an operator (>=).

It has a nested query.

When would this make a reasonable ad hoc query?

When a manager might want to investigate whether the high-end products are selling and first needs to identify the product codes and prices.

Business Interpretation

INSERT INTO PRODUCT

VALUES ('BRT-345','Titanium drill bit','18-Oct-2020', 75, 10, 4.50, 0.06, NULL);

Business interpretation:

- Add a new product into the database. The product has a primary key of BRT-345 and is called a Titanium drill bit, etc.

Now create a similar query for a student relation with attributes Student_ID, name, and email. Populate the database with several records and show a sample command to do so.

Student

Student_ID	Name	Email
GSU-01	James Smith	jsmith1@gsu.edu
GSU-02	Janitha Senn	jsenn1@gsu.edu
GSU-03	Lin Yin	lyin1@gsu.edu

Sample command:

```
Insert into Student
(Student_ID, Name, Email)
Values ('GSU-01', 'James Smith,' 'jsmith1@gsu.edu');
```

Park Example [Again]

Equipment: (E#, description)
Activity: (Activity#, type, start-time, end-time, location, ID)
Person-Responsible: (ID, name, email, phone)
Equipment-Activity: (E#, Activity#)

List the names of the people responsible for reserving the park for baseball activities.

Select name
From Person-Responsible, Activity
Where Person-Responsible.ID = Activity.ID,
And type = 'baseball';