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CIS 245 ONL01

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Lab #5

There are 2 parts to this assignment:

1)  I will be checking to see that you logged into the database server on campus so you must create tables for this assignment and don't delete them so I can see that you were able to log in successfully.

2) Do  ***Questions 3.30 to 3.48*** at the end of  **Chapter 3 (pages 237-239)**.  You will be creating tables and writing queries.  You must test them and then when they work, copy/paste the command (query) you created into a Word document which will be handed in for credit.  Don't delete the tables you create (just write the command) so I can double-check that you are using the database server!

\*\*  Get online with me if you need help.  This is a tough chapter and requires you to do some hands-on SQL coding and debugging, not just guessing at a SQL command.  Next week you will be doing more advanced SQL so you must understand this week's work to set you up for next week.

When you are finished testing your SQL, submit your Word document with your SQL commands here on Blackboard for credit.  I do not need the output display, just the commands since I will be running them to test them out!

Questions 3.30-3.48:

PET\_3 (PetID, PetName, PetType, BetBreed, PetDOB, PetWeight, OwnerID)

Data for PET\_3 are shown in Figure 3-28. Except as specifically noted in the question itself, use the PET\_3 table for your answers to all of the remaining review questions.

Table

Description automatically generated

3.30 Write the required SQL statements to create the PET\_3 table. Assume that PetWeight is Numeric(4,1). If you are using an actual database, insert data into the table using SQL.

**CREATE** **TABLE** PET\_3(PetID **INT**, PetName **VARCHAR**(20), PetType **VARCHAR**(10), PetBread **VARCHAR**(20), PetDOB **DATE**, PetWeight **DECIMAL**(4,1) , OwnerID **INT**);

**INSERT** **INTO** PET\_3 **VALUES**(1, 'King', 'Dog', 'Std.Poodle', '16-02-27', 25.5, 1), (2, 'Teddy', 'Cat', 'Cashmere', '17-02-01', 10.5, 2), (3, 'Fido', 'Dog', 'Std.Poodle', '15-07-17', 28.5, 1), (4, 'AJ', 'Dog', 'Collie Mix', '16-05-05', 20.0, 3), (5, 'Cedro', 'Cat', 'Unknown', '14-06-06', 9.5, 2), (7, 'Buster', 'Dog', 'Border collie', '13-12-11', 25.0, 4);

3.31 Write an SQL statement to display the minimum, maximum, and average weight of dogs.

**SELECT** **MIN**(PetWeight), **MAX**(PetWeight), **AVG**(PetWeight)

**FROM** PET\_3;

3.32 Write an SQL statement to group the data by PetBreed and display the average weight per breed.

**SELECT** **AVG**(PetWeight)

**FROM** PET\_3 **GROUP** **BY** PetBread;

3.33 Answer question 3.32, but consider only breeds for which two or more pets are included in the database.

**SELECT** **COUNT**(**\***), **AVG**(PetWeight)

**FROM** PET\_3

**GROUP** **BY** PetBreed **HAVING** **COUNT**(**\***)**>=**2

3.34 Answer question 3.33, but do not consider only any pet having the breed of Unknown.

ELECT PetBreed, **AVG**(PetWeight) **AS** AvgBreedWeight

**FROM** PET\_3

**WHERE** PetBreed **<>** 'Unknown'

**GROUP** **BY** PetBreed

**HAVING** **Count** (**\***) **>** 1;

3.35 Write an SQL statement to display the last name, first name, and email of any owners of cats. Use a subquery.

**SELECT** OwnerLastName, OwnerFirstName, OwnerEmail

**FROM** PET\_OWNER

**WHERE** OwnerID **IN**

(**SELECT** OwnerID

**FROM** PET

**WHERE** PetType **=** 'Cat');

3.36 Write an SQL statement to display the last name, first name, and email of any owners of cats named Teddy. Use a subquery.

**SELECT** OwnerLastName, OwnerFirstName, OwnerEmail

**FROM** PET\_OWNER

**WHERE** OwnerID **IN**

(**SELECT** OwnerID

**FROM** PET

**WHERE** PetName**=** 'Teddy');

3.37 Write SQL statements to (1) create the BREED table, (2) insert the data in Figure 3-29 into the BREED table, (3) alter the PET\_3 table so that PetBreed is a forgeign key referencing BreedName in BREED with cascading updates enabled, and (4**)** with the BREED table added to the pet database, write an SWL statement to display the last name, first name, and email of any owner of a pet that has an average LifeExpectancy value greater than 15. Use a subquery.

**CREATE** **TABLE** BREED(

BreedName **VarChar**(100) **NOT** **NULL**,

MinWeight **Numeric**(4,1) **NULL**,

MaxWeight **Numeric**(4,1) **NULL**,

AverageLifeExpectancy **Numeric**(4,1) **NULL**,

**CONSTRAINT** BREED\_PK **PRIMARY** **KEY**(BreedName));

3.38 Answer question 3.35, but use a join using JOIN ON syntax. What are the consequences of using (or not using) the DISTINCT keyword in this version of the query?

**SELECT** **DISTINCT** OwnerLastName, OwnerFirstName, OwnerEmail

**FROM** PET\_OWNER **as** PO **INNER** **JOIN** PET **as** POG

PO.OwnerID **=** P.OwnerID

**WHERE** PetType **=** 'Cat';

3.39 Answer question 3.36, but use a join using JOIN ON syntax. What are the consequences of using (or not using) the DISTINCT keyword in this version of the query?

3.40 Answer part (4) of question 3.37, but use joins using JOIN ON syntax. What are the consequences of using (or not using) the DISTINCT keyword in this version the query?

3.41 Write an SQL statement to display the OwnerLastName, OwnerFirstName, PetName, PetType, PetBreed, and AverageLifeExpectancy for pets with a known PetBreed.

3.42 Write SQL statements to add three new rows to the PET\_OWNER table. Assume that OwnerID is a surrogate key and that the DBMS will provide a value for it. Use the first three lines of data provided in Figure 3-30.

3.43 Write SQL statements to add three new rows to the PET\_OWNER table. Assume that OwnerID is a surrogate key and that the DBMS will provide a value for it. Assume, however that you have only OwnerLastName, OwnerFirstName, and OwnerPhone and that therefore OwnerEmail is NULL. Use the last three lines of data provided in Figure 3-30.

3.44 Write an SQL statement to change the value of Std. Poodle in BreedName of BREED to Poodle, Std. When you ran this statement, what happened to the data values of PetBreed in the PET\_3 table? Why did this occur?

**UPDATE** PET\_3

**SET** BreedName **=** 'Poodle, Std'

**WHERE** BreedName **=** 'Std. Poodle';

3.45 Explain what will happen if you leave the WHERE clause off your answer to question.

3.46 Write an SQL statement to delete all rows of pets of type Anteater. What will happen if you forget to code the WHERE clause in this statement?

**DELETE** **FROM** PET **WHERE** PetType**=**'Anteater';

3.47 Write an SQL statement to add a PetWeight column like the one in PET\_3 to the PET table, given that this column is NULL. Again, assume that PetWeight is Numeric(4,1).

**ALTER** **TABLE** PET **ADD** PetWeight **numeric**(4,1);

3.48 Write SQL statements to insert data into the PetWeight column you created in question 3.47. Use the PetWeight data from the PET\_3 table as shown in Figure 3-28.

**INSERT** **INTO** PET (PetWeight) **select** PetWeight **from** PET\_3;