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**\*/ Class: CS6070 \*/**

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**/\* Lab #: 2 \*/**

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**Projection:** **Identify the SQL that answers each of the following questions:**

/\* What pets are in the database?\*/

SELECT \* from PET;

/\* What are the names of the pets in the database? \*/

SELECT Name from PET;

/\* What are the ID numbers and breeds of the pets in the database? \*/

SELECT ID, Breed FROM PET;

/\* What are the names, species, and breeds of the pets in the database? \*/

SELECT Name, Species, Breed FROM PET;

/\* What are the names, genders, and altered status of the pets in the database? \*/

SELECT Name, Gender, Altered FROM PET;

**Restriction:** **Identify the SQL that answers each of the following questions:**

/\* What dogs are in the database? \*/

SELECT \* FROM PET WHERE Species = ‘Dog’;

/\* What cats are in the database? \*/

SELECT \* FROM PET WHERE Species = ‘Cat’;

/\* What rabbits are in the database? \*/

SELECT \* FROM PET WHERE Species = ‘Rabbit’;

/\* What pets are female?\*/

SELECT \* FROM PET WHERE Gender = ‘Female’;

/\* What pets are male?\*/

SELECT \* FROM PET WHERE Gender = ‘Male’;

**Function: Identify the SQL that answers each of the following questions:**

/\* What is the total number of scores received for the tests taken? \*/

SELECT COUNT(Score) FROM TEST\_SCORES;

/\* What is the sum of the scores of the tests taken? \*/

SELECT SUM(Score) FROM TEST\_SCORES;

/\* What is the average of the scores of the tests taken? \*/

SELECT AVG(Score) FROM TEST\_SCORES;

/\* What is the lowest score of the tests taken? \*/

SELECT MIN(Score) FROM TEST\_SCORES;

/\* What is the highest score of the tests taken? \*/

SELECT MAX(Score) FROM TEST\_SCORES;

**Group By: Identify the SQL that answers each of the following questions:**

/\* What is the total number of scores received by each student? \*/

SELECT STUDENTID, COUNT(Score) FROM TEST\_SCORES GROUPBY StudentID;

/\* What is the total number of scores received for each test? \*/

SELECT TestID, COUNT(Score) FROM TEST\_SCORES GROUPBY TestID;

/\* What is the sum of the scores for each student? \*/

SELECT STUDENTID, SUM(Score) FROM TEST\_SCORES GROUPBY StudentID;

/\* What is the average score for each test? \*/

SELECT TestID, AVG(Score) FROM TEST\_SCORES GROUPBY TestID;

/\* What is the average score for each student? \*/

SELECT STUDENTID, AVG(Score) FROM TEST\_SCORES GROUPBY StudentID;

/\* What is the lowest score received for each test? \*/

SELECT TestID, MIN(Score) FROM TEST\_SCORES GROUPBY TestID;

/\* What is the lowest score received by each student? \*/

SELECT STUDENTID, MIN(Score) FROM TEST\_SCORES GROUPBY StudentID;

/\* What is the highest score received for each test? \*/

SELECT TestID, MAX(Score) FROM TEST\_SCORES GROUPBY TestID;

/\* What is the highest score received by each student? \*/

SELECT STUDENTID, MAX(Score) FROM TEST\_SCORES GROUPBY StudentID;

**Having: Identify the SQL that answers each of the following questions:**

/\* What is the total number of scores for each test with a total score of at least 200? \*/

SELECT TestID, COUNT(Score) FROM TEST\_SCORES GROUP BY TestID HAVING SUM(Score) >= 200;

/\* What is the total number of scores for each student with a total score of at least 200? \*/

SELECT StudentID, COUNT(Score) FROM TEST\_SCORES GROUP BY StudentID HAVING SUM(Score) >= 200;

/\* What is the total number of scores for each student who has taken exactly three tests (i.e. has 3 scores)? \*/

SELECT StudentID, COUNT(Score) FROM TEST\_SCORES GROUP BY StudentID HAVING COUNT(Score) = 3;

/\* What is the total number of scores for each test that has been taken by exactly 3 students (i.e. has 3 scores)? \*/

SELECT TestID, COUNT(Score) FROM TEST\_SCORES GROUP BY TestID HAVING COUNT(Score) = 3;

/\* What is the average score for each test which has received exactly three scores (i.e. taken by 3 students)? \*/

SELECT TestID, AVG(Score) FROM TEST\_SCORES GROUP BY TestID HAVING COUNT(Score) = 3;

/\* What is the average score for each student with exactly three scores (i.e. taken 3 tests)? \*/

SELECT StudentID, AVG(Score) FROM TEST\_SCORES GROUP BY StudentID HAVING COUNT(Score) = 3;

/\* What is the lowest score for each test with exactly three scores (i.e. taken by 3 students)? \*/

SELECT TestID, MIN(Score) FROM TEST\_SCORES GROUP BY TestID HAVING COUNT(Score) = 3;

/\* What is the lowest score for each student with exactly three scores (i.e. taken 3 tests)? \*/

SELECT StudentID, MIN(Score) FROM TEST\_SCORES GROUP BY StudentID HAVING COUNT(Score) = 3;

/\* What is the highest score for each test with exactly three scores (i.e. taken by 3 students)? \*/

SELECT TestID, MAX(Score) FROM TEST\_SCORES GROUP BY TestID HAVING COUNT(Score) = 3;

/\* What is the highest score for each student with exactly three scores (i.e. taken 3 tests)? \*/

SELECT StudentID, MAX(Score) FROM TEST\_SCORES GROUP BY StudentID HAVING COUNT(Score) = 3;

**Distinct: Identify the SQL that answers each of the following questions:**

/\* What are the names of all the different pets in the database? \*/

SELECT Name FROM PET;

/\* What are the distinct names of the pets in the database? \*/

SELECT DISTINCT Name FROM PET;

/\* What are the species of all the different pets in the database? \*/

SELECT Species FROM PET;

/\* What are the distinct species of the pets in the database? \*/

SELECT DISTINCT Species FROM PET;

/\* What are the genders of all the different pets in the database? \*/

SELECT Gender FROM PET;

/\* What are the distinct genders of the pets in the database? \*/

SELECT DISTINCT Gender FROM PET;

/\* What are the genders and altered status of all the different pets in the database? \*/

SELECT Gender, Altered FROM PET;

/\* What are the distinct genders and altered status of the pets in the database? \*/

SELECT DISTINCT Gender, Altered FROM PET;

**Order By: Identify the SQL that answers each of the following questions:**

/\* Who are the pets in the database, sorted by ID number? \*/

SELECT \* FROM PET ORDER BY ID;

/\* Who are the pets in the database, sorted by name? \*/

SELECT \* FROM PET ORDER BY Name;

/\* Who are the pets in the database, sorted by name, in reverse order? \*/

SELECT \* FROM PET ORDER BY Name DESC;

/\* What are the names, species, and breeds of the pets in the database, sorted by ID number? \*/

SELECT Name, Species, Breed FROM PET ORDER BY ID;

/\* What are the names, species, and breeds of the pets in the database, sorted by name? \*/

SELECT Name, Species, Breed FROM PET ORDER BY Name;

/\* What are the names, species, and breeds of the pets in the database, sorted by name, in reverse order? \*/

SELECT Name, Species, Breed FROM PET ORDER BY Name DESC;

/\* What are the names of the pets in the database, sorted by ID number? \*/

SELECT Name FROM PET ORDER BY ID;

/\* What are the names of the pets in the database, sorted by name? \*/

SELECT Name FROM PET ORDER BY Name;