(Please include your webuser name and password in the submission)

In this assignment, you are required to create tables in your PostgreSQL database using the sample data from Figure 2.22 (pp. 56). The schema information can be found in Exercise 2.3.2 (pp. 37).

Exercise 2.3.2 : This exercise introduces another running example, concerning

World War II capital ships. It involves the following relations:

Classes (class , type , country , numGuns, bore, displacement)

Ships(name, class , launched)

Battles(name, date)

Outcomes (ship, battle, result)

Ships are built in “classes” from the same design, and the class is usually named

for the first ship of that class. The relation C lasses records the name of the

class, the type ( ’bb’ for battleship or ’bc’ for battlecruiser), the country that

built the ship, the number of main guns, the bore (diameter of the gun barrel,

in inches) of the main guns, and the displacement (weight, in tons). Relation

Ships records the name of the ship, the name of its class, and the year in which

the ship was launched. Relation Battles gives the name and date of battles

involving these ships, and relation Outcomes gives the result (sunk, damaged,

or ok) for each ship in each battle.

Notice that there are some “dangling tuples” in this dataset, e.g., ships mentioned in Outcomes that are not mentioned in Ships. You cannot assume that every ship has a class.

(NOTE: Your SQL queries must pass the compiler check or 0 point will be awarded. **Avoid** using ‘distinct’ unless it is absolutely necessary!)

1. Textbook: pp. 279, Exercise 6.3.2 (b) and (e) (24 pts).

(You need to provide two significantly different SQL queries for each subquestion and each query should include a subquery.) (e.g., using different

sets of the operators EXISTS, IN, ALL, and ANY)

b) Find the classes of ships, at least one of which was sunk in a battle.

e) Find the names of the ships whose number of guns was the largest for

those ships of the same bore.

(return the names of ships with these classes)

**Class | NumGuns | bore**

Tennessee,Bk | 12 | 14

Revenge | 8 | 15

Iowa, NC | 9 | 16

Yamato | 9 | 18

1. Textbook: pp. 290, Exercise 6.4.7. (60pts)

Exercise 6.4.7: Write the following queries, based on the database schema

of Exercise 2.4.3, and evaluate your queries using the data of that exercise.

a) Find the number of battleship classes.

b) Find the average number of guns of battleship classes.

! c) Find the average number of guns of battleships. Note the difference between

(b) and (c); do we weight a class by the number of ships of that

class or not?

! d) Find for each class the year in which the first ship of that class was

launched.

! e) Find for each class the number of ships of that class sunk in battle.

!! f) Find for each class with at least three ships the number of ships of that

class sunk in battle.

!! g) The weight (in pounds) of the shell fired from a naval gun is approximately

one half the cube of the bore (in inches). Find the average weight of the

shell for each country’s ships.

*Submit the queries in text form and the results in screenshot form.*