

CE 223 - DATABASE SYSTEMS

WEEK #6 RECITATION QUESTIONS

- 6.1.4
- 6.2.3
- 6.3.2

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

Ships(name, class, launched)

Battles(name, date)

Outcomes(ship, battle, result)

Exercise 6.1.4: Write the following queries based on the database schema of Exercise 2.4.3:

```
Classes(class, type, country, numGuns, bore, displacement)
Ships(name, class, launched)
Battles(name, date)
Outcomes(ship, battle, result)
```

and show the result of your query on the data of Exercise 2.4.3.

- a) Find the class name and country for all classes with at least 10 guns.
- b) Find the names of all ships launched prior to 1918, but call the resulting column `shipName`.
- c) Find the names of ships sunk in battle and the name of the battle in which they were sunk.
- d) Find all ships that have the same name as their class.
- e) Find the names of all ships that begin with the letter "R."
- ! f) Find the names of all ships whose name consists of three or more words (e.g., King George V).

Exercise 6.2.3: Write the following queries, based on the database schema

```
Classes(class, type, country, numGuns, bore, displacement)
Ships(name, class, launched)
Battles(name, date)
Outcomes(ship, battle, result)
```

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

- a) Find the ships heavier than 35,000 tons.
- b) List the name, displacement, and number of guns of the ships engaged in the battle of Guadalcanal.
- c) List all the ships mentioned in the database. (Remember that all these ships may not appear in the **Ships** relation.)
- ! d) Find those countries that have both battleships and battlecruisers.
- ! e) Find those ships that were damaged in one battle, but later fought in another.
- ! f) Find those battles with at least three ships of the same country.

Exercise 6.3.2: Write the following queries, based on the database schema

```
Classes(class, type, country, numGuns, bore, displacement)
Ships(name, class, launched)
Battles(name, date)
Outcomes(ship, battle, result)
```

of Exercise 2.4.3. You should use at least one subquery in each of your answers and write each query in two significantly different ways (e.g., using different sets of the operators EXISTS, IN, ALL, and ANY).

- a) Find the countries whose ships had the largest number of guns.
- ! b) Find the classes of ships, at least one of which was sunk in a battle.
- c) Find the names of the ships with a 16-inch bore.
- d) Find the battles in which ships of the Kongo class participated.
- !! e) Find the names of the ships whose number of guns was the largest for those ships of the same bore.