

THE UNIVERSITY OF BRITISH COLUMBIA
CPSC 304: Midterm Examination – Individual – June 09, 2014

Important notes about this examination

1. You have **65 minutes** (1 hour and 5 minutes) to write this examination.
2. Write your name, student #, and signature in ink (pen). You may use a pencil to write your solutions.
3. Answer all the questions on this paper.
4. The marks for each question are given in [].
5. Good luck!

Full Name: _____

Signature: _____

UBC Student #: _____

Please do not write in this space:

Question 1: [] [] [] [] Question 5: [] [] [] []

Question 2: [] [] [] [] [] [] [] []

Question 3: [] [] [] [] [] [] [] []

Question 4: [] [] [] [] [] [] [] []

[] [] [] [] [] [] [] []



All of the questions on this midterm are related to the database schema and database instance which is on Appendix A. Please review it carefully and answer all of the following questions. For each query remove duplicates from your final answers where they are not explicitly requested, and include no extra columns).

1. Write the following SQL queries **without using subqueries**.

1A.[5 marks] Find the name of the ships heavier than 35,000 tons.

Query

1B.[5 marks] Find those countries that have both battleships and battlecruisers.(Assuming the intersect operator is **not** implemented). Show the result of your query using data from Appendix A.

Query	Result

1C.[5 points] Find the name of all ships that begin with the letter “R”. Show the result of your query using data from Appendix A.

Query	Result

2 . Write the following SQL queries using **at least one subquery** (EXISTS, IN, ALL, ANY operators), Show the result of your query using data from Appendix A.

2A.[7 marks] Find the countries whose ships had the largest number of guns.

Query	Result

2B.[7 marks] Find the models of ships, at least one of which was sunk in a battle

Query	Result

2C.[6 marks] Find the battles in which ships of the “Revenge” model participated

Query	Result

3. Write the following SQL queries. You can use any of the operators taught in the lectures. Show the result of your query using data from Appendix A.

3A.[7 marks] For each ShipModel with at least four ships, find the year in which the first ship of that model was launched.

Query	Result

3B.[8 marks] For each ShipModel that has participated in a battle, find the number of ships of that model sunk in battles.

Query	Result

4. The following questions are related to creating and querying views.

4A[6 marks] Define a view BritishShips that gives for each ship of Great Britain its name, model, type, number of guns, bore, displacement, and year launched.

Query

4B.[4 marks] Write a query using the BritishShips view asking for the number of guns and displacements of all British battleships launched before 1919.

Query

5. The following questions are related to modifying data of the relations provided on App

5A.[5 marks] Delete from table Ships all ships sunk in battles.

Query

5B.[4 marks] Modify the shipModels relation so that gun bores are measured in centimeters instead of inches. Note that the attribute type of bore is double. (one inch = 2.5 centimeters)

Query

5C.[3 marks] Insert a new tuple into the Battles table. Ship with name “Revenge” was in battle “Denmark Strait”, and it was damaged during the battle.

Query

5D.[3 marks] Explain the difference between the statement DROP Outcomes and the statement DELETE FROM Outcomes.

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(if you use this, CLEARLY indicate the connection between this work and the problem it is for
both here and where the problem is stated!)

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(if you use this, CLEARLY indicate the connection between this work and the problem it is for
both here and where the problem is stated!)