**CS3431 A24 Wong**

**Assignment 2: SQL 1 – 4**

Due Date: R 9/5 at 11:59pm.

Late Policy: 10 points off until F 9/6 at 5pm. 0 points afterwards. Maximum grade is 100 points.

Submission: Zip your Cruise2a.sql and Cruise2b.sql file and name the file Cruise2.zip. Upload Cruise2.zip to Canvas using the Assignment 2 link.

The homework is to be done individually. You may speak to your classmates about the assignment but cannot exchange information on the actual SQL code that needs to be written. You may not look at another person’s code. As a reminder, use of ChatGPT is not permitted on the assignments but you may use Google to search for information.

You will be creating an expanded version of the database from assignment 1. There are now 6 tables of data, one on each spreadsheet tab: Reservation, Customer, Cruise, TravelAgent, Company, and Ship.

1. The Customer, TravelAgent, and Company schema and data remain the same.
2. The data for Cruise table’s ship names has changed.

Begin with the schema from Assignment 1 Solutions including all of the constraints, and add or modify to it following the directions below. As with Assignment 1, only use named constraints.

Copy your working commands in SQL Developer to **Cruise2a.sql** which will include all your SQL commands for parts 1, 2, and 3:

1. (5 points) The first set of commands will drop the tables and sequences so you can run your Cruise2a.sql file over and over. Do not use “Cascade Constraints” with your drop commands.
2. (15 points) Write the SQL commands to create the new and modified tables following the instructions below:
   1. Create the Ship table with the given table names, field names, and datatypes given in the spreadsheet.
   2. The combination of shipName and companyName is the primary key.
   3. The Ship table references the Company table. In other words, each ship belongs to a single company.
   4. The Peninsular & Oriental Steam Navigation Company, founded in 1822, was the first company to offer passengers commercial leisure Cruise in 1844. As a result, the yearBuilt field should be restricted to the year 1822 or after.
   5. The tonnage field in the Ship table can only have the values from 50,000 to 110,000 inclusive.
   6. Enter the data for the Ship table from the given spreadsheet. **Note that the shipNames have changed from Assignment 1!**
   7. If a company is deleted, the referential integrity should be set so all ships referencing it are deleted.
   8. Create a query to display the table’s data
   9. The Cruise table no longer directly references the Company table. Instead, it references the company and shipName fields in the Ship table.
   10. If a company or ship is deleted, then the referential integrity should be set so all cruises referencing it will also be deleted.
   11. The Reservation table now has a new paymentDate field that is initially null for every record. Make sure your insert statements now include these **null** values.
3. (10 points) Update the payment deadlines in Reservation to be 120 days before the travel date, or the current date (use SYSDATE), whichever is later.

For example, if today is August 31, 2024 and

1. the travel date is September 4, 2024, then the payment deadline is August 31, 2024
2. the travel date is May 17, 2025, then the payment deadline is January 18, 2025.

You will find it useful to search for the Oracle function that determines the maximum value in a series. Hint: it is not max(), which is an aggregate function!

Before you proceed to the next section, you will want to create the database schema so you can see all the tables and its attributes in one place.

Use PK, FK, and UQ after a field name to indicate primary, foreign, and candidate keys:

Books (ISBN PK, FirstName, LastName, Title UQ, PubID FK)

You will NOT submit this schema as part of your assignment. It is strictly for your convenience.

Copy your working commands in SQL Developer to **Cruise2b.sql** which will include all your SQL commands for part 4:

1. Write the following SQL commands
2. (10 points) List the ship and the company it belongs to where the stock symbol has a letter ‘R’ in it, and the total capacity of people on the ship is over 3500. Display the ship name, company name, and a header of TotalPeople for the total ship capacity. Use theta joins.
3. (20 points) List the first name and last name of travel agents and their totals sales. Sort the results in order of greatest total sales to smallest total sales. If travel agents have the same total sales, sort by last name in regular alphabet order and then first name in regular alphabetic order.   
     
   Display the total sales with a leading dollar sign (do not worry about spaces between the dollar sign and the number). Format the result to have up to 5 digits to the left of the decimal point and 2 digits to the right of the decimal point. There should be a comma to separate thousands. The following numbers are examples of correct formatting:

$ 5,720.00

$ .89

$ 24,981.24

1. (20 points) List payment dates in chronological order and the number of customers under the age of 30 who have those payment dates. The order should list the number of null payment dates last. Display a total of all customers at the bottom.

Big Hint: Do the posted SQL 3 and 4 demos from start to end (not the version we did in class but the solutions posted on Canvas)!

1. (20 points) For each ship list the company name, ship name and the total amount of sales the ship is generating – the sum of all the cruises sold together with the total tips customers will be paying on the cruises. Subtotals for each company should be displayed and a total for all cruises displayed at the bottom of the table. Display the total amount of sales with a TotalPrice header and with the following format: 2 digits to the right of the decimal place are displayed, a dollar sign before the amount, and if the total is less than a dollar, a leading single 0 is displayed to the left of the decimal point. For example, the following are all valid displays: $15322.48, $0.29, $4500.00. Use theta joins.