Northeastern University
College *of* Computer and Information Science

CS1100: Access Lab 3

Nested Database Queries

To complete this assignment you must submit an electronic copy to Blackboard by the due date. Download the starter file and **save a copy of it**. **Do not open the Access database directly from Blackboard – save it to your desktop first!**

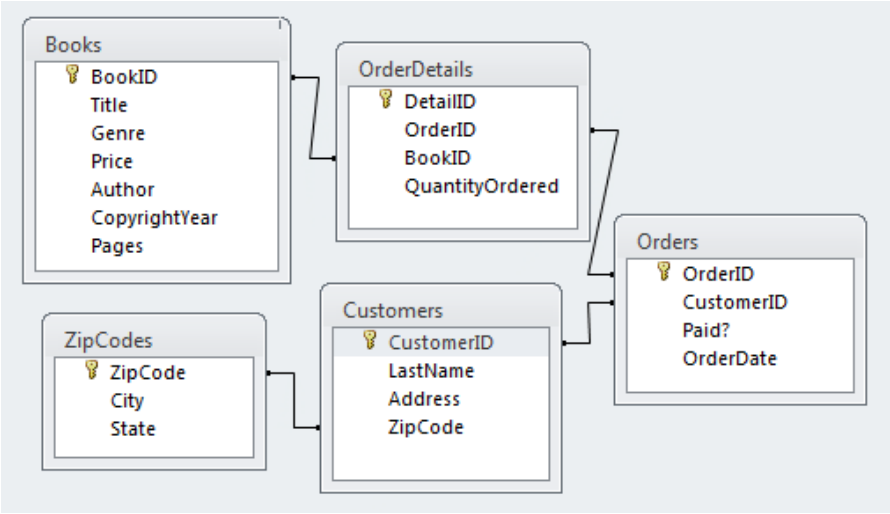
This database represents customer and order information for the *GoodReads* bookstore. We have been asked to help the owner understand his sales better and therefore have been given certain queries. **For each of the problems assume that the data in the database might change. Your query should give the correct results for whatever data happens to be in the database.** If the problem says that your query result should not have duplicate entries for a particular field, it is not sufficient that your there are no duplicate entries for the particular data in the database. Your query must give unique values for that field whatever data happens to be in the database.

Knowledge Required

- Aggregate functions (especially COUNT, AVG, MIN, MAX, and SUM)
- Calculated fields and expressions
- Selection criteria and WHERE clauses with aggregate functions
- Nested queries using multiple subqueries

Database Structure

To help you in designing queries, the database structure is shown below:



Queries (5 Points Each)

Save your queries using the naming pattern *QLastnameX*, where *Lastname* is your last name and *X* is the query number. Name your subqueries using the naming pattern *QLastnameXA*, where *X* is the query number and *A* is a letter. For instance, if I wrote a subquery for Query 1 it should be named QSchmidt1a. If I needed a second subquery for Query 1, it would be called QSchmidt1b. You may reuse subqueries in other questions without renaming them however.

1. How many Orders are there which include an Order Detail with an extended price of more than $50? Recall that the extended price of an Order Detail is QuantityOrdered * Price. Your output must be a single number.

2. How many Orders are there which have a total value of more than $50, i.e., the number of orders which have an order total more than $50? Give a single number.

3. How many Customers placed an Order which included an Order Detail with an extended price of more than $50? Give a single number.

4. What is the maximum Order total across all orders? Give a single number.

5. Which Order or Orders has the maximum order total? List the *OrderID* only, making sure there are not duplicate rows.

6. How many cities have one or more Customers that placed an Order for at least $60? Give a single number.

7. Who placed the Order for the largest total amount? List Last Name and Customer ID. (No duplicate entries for the name)

8. How many Customers placed 2 or more orders? Give a single number.

9. How many Customers placed at least one Order with more than 4 different books? Give a single number.

10. How many Customers placed at least 2 orders, each of which has a total value of more than $50? Give a single number.

11. What is the most expensive book? Provide the BookID, Title, and the Author.

12. What is the total number of Pages in each order? List the OrderID and the number of pages. Be careful to take into account the quantity ordered of the book, i.e., the OrderDetails's [QuantityOrdered].

13. Which is the Order/Orders with the least number of pages? List OrderID only.

14. Which Orders have between 30 and 100 total pages (inclusive)? List all of the OrderIDs and their total number of pages.

15. Which Orders have an above average number of total pages? List the OrderIDs and their total number of pages.

16. Which Books were ordered by customers from only one city? (i.e. books where all of the contacts that ordered them came from the same city) List the BookID.

17. Who placed an order for the most expensive Book (recall that you found the most expensive Book in question 11)? List the CustomerID and Last Name. There may be more than one customer, but each customer should only appear once in the result.

18. How many copies of the Book with ID 86 did we ship? Give a single number. Count only the number of copies that were shipped, i.e., that were part of an order.

19. Write a query to find how many copies of a given Book were shipped. Hint: It's like the query for question 18 but Access should prompt for a BookID rather than "hard coding" a specific Book ID.

20. How many Books are there in each genre? List the Genre and the number of Books in each one.

After you have completed these tasks, your modified version of the database should contain a number of additional queries. **Close Access and then submit this modified Access database to Blackboard.**

Grading Rubric

This rubric is intended to guide graders in their evaluation of the students' submissions.

Criterion	Discussion	Grading
Queries named according to naming pattern	All queries must follow the pattern *QLastnameX* and subqueries follow the pattern *QLastnameXA*	-2% for each incorrectly named query and subquery.
Queries produce correct output and are designed correctly	Each query must produce the correct result.	-5% for each query that does not produce correct result or is not designed to produce correct output for all data possibilities -1% for each extra or missing field -2 % for incorrect filtering criteria