

CS1100: Assignment 14

Creating and Querying Databases

To complete this assignment you must submit an electronic copy to BlackBoard by the due date. Download the starter database and save it under the name *CS1100.LastName.E14* and where *LastName* is your last name.

To download the files from Google Drive, click the download button -- do not open the files in Google.



Knowledge Needed

This lab requires the following Access techniques:

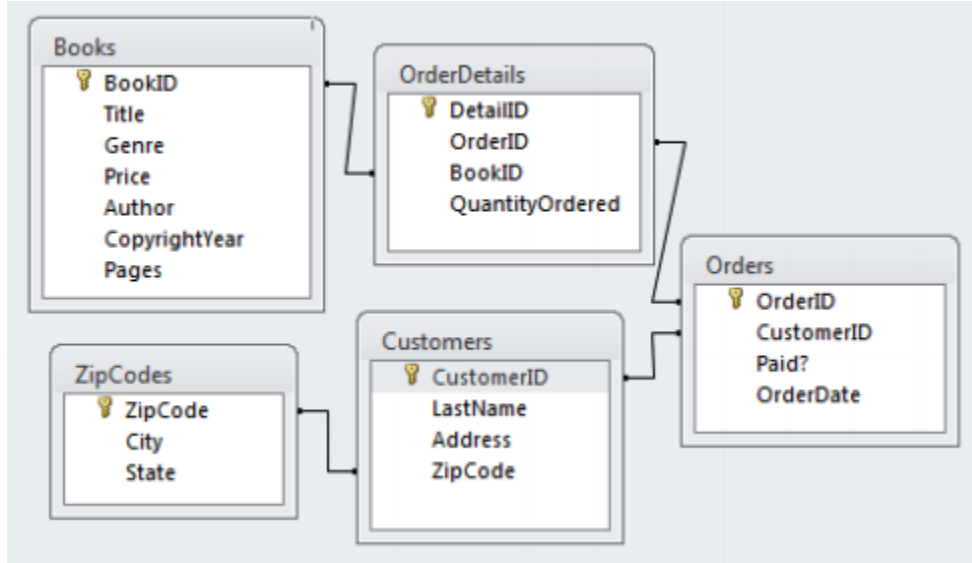
- Building queries using multiple tables using WASE (Widening-Aggregation-Selection-Elimination of duplicates) also called WAFE (Widening-Aggregation-Filtering-Elimination of duplicates)
- Use GROUP BY to eliminate duplicates
- Apply aggregation functions to groups as well as tables
- Create calculated fields (Widening)
- Leverage nested queries to build complex queries
- Follow the Principle of Simplest Query (WAFE)

The Database

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.

Database Structure

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



Queries (10 Points Each)

Save your queries using the naming pattern QLastnameX-Optional where Lastname is your last name and X is the query number. Name your subqueries using the naming pattern QLastnameXA-Optional, where X is the query number and A is a letter. For instance, if Schmidt wrote a subquery for Query 1 it should be named QSchmidt01a-Winners. If Schmidt needed a second subquery for Query 1, it would be called QSchmidt01b-Winners.

Optional is a name which reminds us what the query is about, e.g. QSchmidt01-OrderTotals or QSchmidt01a-ExtPrices. You may reuse subqueries in other questions without renaming them.

1. How many Orders are there which include an extended price of more than \$50? Recall that the extended price of an Order Detail is Quantity Ordered * Price. Your output must be a single number. Answer: 4 orders. Give a single number.
2. How many Customers placed an Order which included an extended price of more than \$50? Give a single number. Answer: 4 customers. Give a single number.
3. Which Order or Orders has the maximum order total? List the OrderID only, making sure there are not duplicate rows. In other words, which order is the "largest" order.

4. Who placed the Order for the largest total amount? List Last Name and Customer ID. (No duplicate entries for the same customer.)
5. How many Customers placed at least one Order with more than 4 different books? Give a single number.
6. 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].
7. Which Orders have an above average number of total pages? List the OrderIDs and their total number of pages.
8. 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 only.
9. Who placed an order for the most expensive Book? List the CustomerID and LastName. There may be more than one customer, but any particular customer should be listed only once.
10. Write a query to find how many copies of a given Book were ordered. Hint: Access should prompt for a BookID.

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:

- -10pts for each query that produces an incorrect result. Partial credit may be given.
- -5% for not naming queries correctly