Due Date: Saturday, October 19, 2013 11:00 PM
Points: 40 points max
Turn In: The script and spool files turned in via the assignment drop box

General Directions

This assignment uses the tables from the a_bkinfo and a_bkorders databases. You need to spend some time reading the create table statements and looking at some of the data before you try writing these queries. Many of the remaining assignments use these tables.
Use the two part table name in all queries.

Do not worry about formatting or column widths unless the task specifically says to do so. The sample data does not show the actual results. Use the column aliases shown in the sample display.

Things to think about as you do the assignment.

- What is the difference between Count (…) and Count (distinct …)? If the attribute value you are counting can occur more than once, do you want to count each occurrence? How is this affected by joining several tables in the From clause?
- Do you need inner join or outer joins? (Hint- you will not need a full join.) Do not use an outer join if an inner join is sufficient; an outer join requires more resources. Do not use an outer join and then throw away the rows you added due to the outer join.
- How do outer joins affect which column you use for the aggregates?
- Case expressions are useful for some situation where you need to do different things with different values. If your only concern is if something is null or not, then coalesce takes less typing.
- Ignoring the definition of the categories, given in the books document, is not going to help your assignment score.

Tasks

Task 01: Consider all books that have been ordered. Display the book id, the average price at which the book was sold and the total number of copies of the book ordered. Round the average price to the nearest dollar.

```
+---------+----------+---------------+
| Book_id | AvgPrice | CopiesOrdered |
+---------+----------+---------------+
|    1077 |      123 |            11 |
|    1101 |       55 |           854 |
|    1102 |       67 |            42 |
|    1103 |        8 |           185 |
```

Task 02: For each topic that we have in the topic table, display the topic id and description and the number of books we have for that topic id and the average list price for that topic. Include all topic areas from the topics table even if we have no books on that topic. The average list price is displayed **formatted** with two digits after the decimal point and the string 'n/a' is displayed if we have no books for that topic or if all the books we have for that topic are missing a value for list price. Order by the topic id.

```
+-------+-----------------------+---------------+--------------+
| ID    | topic_descr           | NumberOfBooks | AvgListPrice |
+-------+-----------------------+---------------+--------------+
| ADO   | ADO                   |             2 | 54.99        |
| ART   | Arts, Photography     |             1 | 21.29        |
```

```
| CMP   | Computer Science       |             0 | n/a          |
| FCT   | Fiction                |             3 | 29.95        |
| HIST  | History                |             1 | n/a          |
```

Task 03: Display the number of orders we had in the previous year and the number of customers we have who had at least one order in the previous year. The output is one row.

```
+--------------+----------------------+
| NumberOrders | NumberCustWithOrders |
+--------------+----------------------+
|          147 |                  117 |
+--------------+----------------------+
```

Task 04: Display the number of orders we had in either or both of the two previous months and the number of customers we have who had at least one order in either or both of the two previous months. The output is one row.

```
+--------------+----------------------+
| NumberOrders | NumberCustWithOrders |
+--------------+----------------------+
|           47 |                   17 |
+--------------+----------------------+
```

Task 05: How many orders do we have which include an order for a xml book? Use a variable for the topic id for this test. Display one column, one row- just the number of orders.

```
+---------------------------+
| NumOrders Indicated Topic |
+---------------------------+
|                       123 |
+---------------------------+
```

Task 06: For each publisher that we have in the publisher table, list the publisher id and publisher name as the first column and the date of the most recent order for books from that publisher as the second column and the oldest order as the third column. If there are no orders for books from that publisher, display the message 'No Orders' instead of the date. **Format** the date as shown in the sample display.

```
+------------------------+-----------------+-------------+
| Publisher              | MostRecentOrder | OldestOrder |
+------------------------+-----------------+-------------+
| 9000 Microsoft Press   | 2012-10-06      | 2012-10-06  |
| 9030 McGraw Hill       | 2012-08-08      | 2010-08-08  |
| 9102 Alfred A. Knopf   | No Orders       | No Orders   |
| 9325 Addison Wesley    | 2012-10-06      | 2011-10-28  |
```

Task 07: For each customer who has any orders, calculate the total amount for their orders. The TotalCost column is based on the order price for the books times the quantity purchased.

```
+---------+----------------+-----------+
| cust_id | cust_name_last | TotalCost |
+---------+----------------+-----------+
|  200368 | Blake          |  13022.69 |
|  208950 | Adams          |    109.50 |
|  211483 | Carroll        |   2633.20 |
|  212921 | Books on Tap   |   2542.56 |
```

Task 08: Display the id and name of all publishers who publish more than 3 but no more than 10 books in the Programming **category**.

Task 09: This is a cross tab query. We want to know how many books we carry in each of the indicated **categories**. Display the result as a single output row. The categories are:

- Science
- Programming
- Database Systems
- Data Storage Techniques
- Literature

There is also a column for all books we have.
If a book has more than one topic id in a category, count it only once. If a book is in more than one category, then it counts in each of those categories. For example, suppose we have a book that has the following topic ids: VB, Net. This book is counted once in the Programming category. Suppose we have another book that has the following topic ids: FCT, POE, SCI, and SQL. This book is counted once in the Science category, once in the Literature category, and once in the Database Systems category.
Use the column aliases shown here.

Science	Pgm	DB/SQL	Data Storage	Fict/Poe	all Books
12	22	422	37	87	974

Task 10: We want a display of the order date (year and month only) and the number of orders in each month and the total sales amount each month. The display will look like this. There is one row for each month that we have in our orders table. The first column is the year and month with the month shown as the three letter abbreviation. The second column is the number of orders that month. The third column is the total sales for that month. The display is sorted by the year and month in calendar order.

Year-month	NumberOrders	TotalSales
2011-Nov	7	8050.08
2011-Dec	4	30489.53
2012-Jan	9	16865.88
2012-Feb	8	14736.61
2012-Mar	4	3021.40

Task 11: We want to know how orders we have for each quarter of the year. (The first quarter is months Jan, Feb, Mar; the second is Apr, May Jun, etc). We do not care about the year of the sales just the quarter. Assume that we do have at least one order in each quarter.
The text in the first column must be as shown and the row order for the display must be as shown- with the Fourth Quarter displayed first and the First Quarter displayed last.

SalesQuarter	NumberOfOrders
FourthQuarter	28
Third Quarter	21
Second Quarter	9
First Quarter	55