

IS 475/675 – HW#8 Spring 2016

Each of the problems on this assignment requires you to create a set of SELECT statements (1 or more) to satisfy the request. Most of the questions are best answered with the use of a view. Some questions are best answered using multiple views. The deliverables for this assignment are the same as HW#7: (1) Paper output; (2) Time sheet; and (3) File with SQL code uploaded to the Assignments Upload disk on the College of Business server in the IS475\HW8 directory. Upload only one file with ALL your SQL code including views. Be sure to give the file a unique name (use your name or team # in the file name).

You must include your VIEW code in the deliverable you submit for grading. Since some of the views may be used for more than one question, feel free to put all the VIEW code in an appendix and clearly label the name of the view. It would be very helpful if you highlighted the name with color - either via a color printer or a highlighter. If you prefer to include the view code for each question's answer, that is great (but it will take more paper to print it out).

If you are unable to answer a question correctly, then flag that question on your deliverable. Explain why you think the query did not work correctly.

Be sure to complete question #1 before doing any of the other questions. Question #1 asks you to change the contents of the database.

Here are some important points and vocabulary words about this database.

- It is possible to ship an item in installments (a “partial shipment”). For example, let’s say that a customer on one order ordered a quantity of 12 for itemID ‘A23441.’ It is possible to ship 3 of that quantity in one shipment, 2 of that quantity in another shipment, and 7 in a final shipment. That means there will be 3 different rows in the ShipLine table for that particular combination of orderID and itemID. The reason that the date is included in the primary key for the ShipLine table is because the same orderID and itemID can be on multiple rows in this table and the date and locationid are needed to make each row in the ShipLine table unique. **You must sum the quantity shipped in the ShipLine table by orderID and itemID to get an accurate amount of the number of items shipped in total for a given item on a given order.** I recommend you do this task in a view so that you don’t have to deal with an aggregate function when you want to reference the total quantity shipped for an item on an order.
- There are both “open” and “closed” orders in this database. They are stored in the same tables and there is no flag field to show whether an order is open or closed. An “open” order is an order that has not yet had all its items fully shipped to its customer. A “closed” order is an order that has had all its items fully shipped to its customer. An order is considered “closed” even if there have been overshipments on that order.
- An overshipment occurs when a larger quantity of an item was shipped to a customer than the quantity ordered. It is possible to have overshipments in this database. There is no flag field to show when an overshipment has occurred.
- It is possible to partially ship a given OrderLine. For example, let’s say that a customer ordered a quantity of 12 for itemID ‘A23441.’ It is possible to ship only 8 of the 12 quantity, leaving 4 on backorder. That order is still considered “open” because not all of the quantity ordered for that item has been fully shipped to the customer. There is no flag in the table to indicate that an item has been partially shipped.
- A “partially shipped” order is an order that has had some, but not all, items shipped to its customer. An order is NOT partially shipped if none of the items have been shipped. A partially shipped order is considered to be an “open order.”
- An order that has had no items shipped is also considered to be an “open order.”

Here are the 11 questions for this assignment

- Make the following modifications to the database using SQL DELETE or UPDATE commands:
 - Change the order date in the Order table for OrderID 567123 to 1/15/2016.
 - Change the order date in the Order table for OrderID 671100 to 2/10/2016.
 - Change all the MethodShipped values in the ShipLine table to lower case characters.
 - Change all the State values in the Customer table to upper case characters.
 - Delete any orders from the Order table that have no related rows in the OrderLine table. (this will end up being OrderID 675990, but I prefer that you use a WHERE clause in the DELETE statement to make that determination).
- Create a report listing the shipping status of each order line. Include the columns shown on the sample result table below. The shipping status is determined as follows:

Difference	Shipping Status
qtyordered – sum of quantity Shipped = 0	Completely Shipped
qtyordered – sum of quantity Shipped < 0	Over Shipped
qtyordered – sum of quantity Shipped > 0	Partially Shipped
sum of quantity shipped = 0	Not Shipped

Sort the output by itemID within orderID. I recommend using a SQL view to summarize the total quantity shipped from the ShipLine table (as mentioned on the prior page) so that the main query does not have to use an aggregate function. I recommend using CASE statement in the SELECT list to determine the shipping status. The output below is not the complete result table – it represents only a few rows to help you test your work, but I recommend that you check all your rows for accurate output. Feel free to improve the columnar headings. Hint: there should be 41 rows in the result table since there are 41 rows in the OrderLine table.

	OrderID	OrderDate	CustomerName	ItemID	ItemDescription	QuantityOrdered	TotalShipped	QuantityRemaining	ShippingStatus
1	123000	2016-02-02 00:00:00.000	Barrington, M.	A23441	New York City Monopoly Game Collector's Edition	8	8	0	Completely Shipped
2	123000	2016-02-02 00:00:00.000	Barrington, M.	A34665	Boggle Deluxe 5x5	30	32	-2	Over Shipped
3	123000	2016-02-02 00:00:00.000	Barrington, M.	B67123	Tiny Epic Galaxies	5	5	0	Completely Shipped
4	200335	2016-01-26 00:00:00.000	Rodriguez, K.	A23441	New York City Monopoly Game Collector's Edition	1	6	-5	Over Shipped
5	200335	2016-01-26 00:00:00.000	Rodriguez, K.	A34665	Boggle Deluxe 5x5	1	0	1	Not Shipped
6	200335	2016-01-26 00:00:00.000	Rodriguez, K.	B67123	Tiny Epic Galaxies	1	0	1	Not Shipped
7	200335	2016-01-26 00:00:00.000	Rodriguez, K.	B67466	Diplomacy: Game of Negotiation, Cunning and Deceit.	1	1	0	Completely Shipped
8	223344	2016-02-09 00:00:00.000	Candriller, K.	A23441	New York City Monopoly Game Collector's Edition	55	28	27	Partially Shipped
9	223344	2016-02-09 00:00:00.000	Candriller, K.	A23771	Mysterium	15	45	-30	Over Shipped
10	223344	2016-02-09 00:00:00.000	Candriller, K.	A34665	Boggle Deluxe 5x5	100	110	-10	Over Shipped
11	223344	2016-02-09 00:00:00.000	Candriller, K.	A34882	Perudo	35	35	0	Completely Shipped
12	223344	2016-02-09 00:00:00.000	Candriller, K.	B67123	Tiny Epic Galaxies	25	25	0	Completely Shipped
13	223344	2016-02-09 00:00:00.000	Candriller, K.	B67466	Diplomacy: Game of Negotiation, Cunning and Deceit.	15	0	15	Not Shipped

3. Write a report to display only those lines for question #1 that were overshipped. Feel free to use the same format for the result table as that for question #1, but display only those items that were overshipped. Here are the first three rows of the result table:

	OrderID	OrderDate	CustomerName	ItemID	ItemDescription	QuantityOrdered	TotalShipped	QuantityRemaining	ShippingStatus
1	123000	2016-02-02 00:00:00.000	Barrington, M.	A34665	Boggle Deluxe 5x5	30	32	-2	Over Shipped
2	200335	2016-01-26 00:00:00.000	Rodriguez, K.	A23441	New York City Monopoly Game Collector's Edition	1	6	-5	Over Shipped
3	223344	2016-02-09 00:00:00.000	Candriller, K.	A23771	Mysterium	15	45	-30	Over Shipped

4. Make a report that lists all **open orders** sorted by order date. An open order is any order in the database that has not yet been completely shipped.

This problem could be interpreted two different ways: (1) Report only those order lines of all orders that have not been fully shipped or shipped at all; or (2) Report each and every order line of any order that has at least one OrderLine that has not been shipped at all, or has not been fully shipped at this time. The second interpretation means that you would display those order lines that have been fully shipped as well as those order lines that have not been shipped or have been partially shipped for those orders that have not been fully shipped. **I want your answer to the second interpretation, not the first.** **This interpretation means that you must have a way of determining whether or not an entire order has been fully shipped.** I recommend creating a view to help with this determination. Hint – do not simply add up the total quantity ordered and compare it to the total quantity shipped for a given order. I've included the full result table below so that you can check your output easily.

	OrderID	DateOrdered	CustomerName	ItemID	ItemDescription	QuantityOrdered	TotalShipped	QuantityRemaining	ShippingStatus
1	892211	12/28/2015	Dao, P.	C26133	Knowledge Management: Create a Learning Organiz...	15	0	15	Not Shipped
2	892211	12/28/2015	Dao, P.	C29179	Managing Change: The Game for an Executive Retr...	10	10	0	Completely Shipped
3	892211	12/28/2015	Dao, P.	C34122	A Game of Strategy, Negotiation and Excitement for ...	8	5	3	Partially Shipped
4	450137	12/29/2015	Rodriguez, K.	A23771	Mysterium	16	0	16	Not Shipped
5	450137	12/29/2015	Rodriguez, K.	A34665	Boggle Deluxe 5x5	10	10	0	Completely Shipped
6	450137	12/29/2015	Rodriguez, K.	A34882	Perudo	50	15	35	Partially Shipped
7	450137	12/29/2015	Rodriguez, K.	B67123	Tiny Epic Galaxies	21	29	-8	Over Shipped
8	450137	12/29/2015	Rodriguez, K.	B67466	Diplomacy: Game of Negotiation, Cunning and Deceit.	9	9	0	Completely Shipped
9	450137	12/29/2015	Rodriguez, K.	C26133	Knowledge Management: Create a Learning Organiz...	4	0	4	Not Shipped
10	450137	12/29/2015	Rodriguez, K.	C34122	A Game of Strategy, Negotiation and Excitement for ...	6	0	6	Not Shipped
11	567123	01/15/2016	Rodriguez, K.	C26133	Knowledge Management: Create a Learning Organiz...	1	0	1	Not Shipped
12	200335	01/26/2016	Rodriguez, K.	A23441	New York City Monopoly Game Collector's Edition	1	6	-5	Over Shipped
13	200335	01/26/2016	Rodriguez, K.	A34665	Boggle Deluxe 5x5	1	0	1	Not Shipped
14	200335	01/26/2016	Rodriguez, K.	B67123	Tiny Epic Galaxies	1	0	1	Not Shipped
15	200335	01/26/2016	Rodriguez, K.	B67466	Diplomacy: Game of Negotiation, Cunning and Deceit.	1	1	0	Completely Shipped
16	223344	02/09/2016	Candriller, K.	A23441	New York City Monopoly Game Collector's Edition	55	28	27	Partially Shipped
17	223344	02/09/2016	Candriller, K.	A23771	Mysterium	15	45	-30	Over Shipped
18	223344	02/09/2016	Candriller, K.	A34665	Boggle Deluxe 5x5	100	110	-10	Over Shipped
19	223344	02/09/2016	Candriller, K.	A34882	Perudo	35	35	0	Completely Shipped
20	223344	02/09/2016	Candriller, K.	B67123	Tiny Epic Galaxies	25	25	0	Completely Shipped
21	223344	02/09/2016	Candriller, K.	B67466	Diplomacy: Game of Negotiation, Cunning and Deceit.	15	0	15	Not Shipped
22	781206	02/15/2016	Argiento, B.	B67466	Diplomacy: Game of Negotiation, Cunning and Deceit.	1	4	-3	Over Shipped
23	781206	02/15/2016	Argiento, B.	C29179	Managing Change: The Game for an Executive Retr...	2	0	2	Not Shipped
24	983983	02/19/2016	Jones, M.	A23771	Mysterium	1	0	1	Not Shipped
25	983983	02/19/2016	Jones, M.	B78244	Code Names	18	0	18	Not Shipped
26	400001	02/20/2016	Jones, M.	C26133	Knowledge Management: Create a Learning Organiz...	1	0	1	Not Shipped

5. Which customer paid the least expensive price for the game called “Tiny Epic Galaxies”? Base your answer on the price paid in the OrderLine table. Display the customer name, orderID, orderdate, itemID, item description, selling price of the item (displayed in the column PricePaid), the most current lastcost of the item (displayed as MostCurrentCost in the sample result table), the most current lastcostdate for that item, and the difference between the price and the lastcost. If the most current lastcost is null, display it as zero. Make sure that your query uses the name of the game and not the itemID for the actual search in the “where” clause. The result table is shown on the top of the next page.

	CustomerName	OrderID	OrderDate	ItemID	ItemDescription	PricePaid	MostCurrentCost	LastCost Date	DifferenceBetweenPriceandCost
1	Rodriguez, Karen	450137	Dec 29, 2015	B67123	Tiny Epic Galaxies	14.95	21.80	Feb 02, 2016	-6.85

6. Which order in the database is the most profitable for the company? Determine the profit of the order by calculating the difference between the price and the cost for each item on the order. This should be done by multiplying the quantity ordered by the price and subtracting the quantity ordered by the most current lastcost of the item. Then sum those differences for the entire order to determine the overall profitability of the order. Here is the result table:

	OrderID	OrderDate	CustomerName	ItemID	ItemDescription	QtyOrdered	ItemPrice	LastCostPaid	DifferenceBetweenPriceAndCost	ExtendedDifference
1	892211	Dec 28, 2015	Phong Dao	C26133	Knowledge Management: Create a Learning Organization	15	380.00	212.25	167.75	2516.25
2	892211	Dec 28, 2015	Phong Dao	C29179	Managing Change: The Game for an Executive Retreat	10	259.95	158.85	101.10	1011.00
3	892211	Dec 28, 2015	Phong Dao	C34122	A Game of Strategy, Negotiation and Excitement for Office Retreats	8	200.00	58.50	141.50	1132.00

7. Which customer has ordered the most items from Life's a Game? List information about the owner (name, formatted phone number) as well as the total sum of the items ordered by that customer. This question is not asking you to determine which customer ordered the most different items, but is instead asking which customer ordered the largest quantity of items in total. Thus, calculate the sum of the quantity of items ordered in the OrderLine table to determine the total quantity of items ordered. The question is asking for the MAX of a SUM, or what is also referred to as an “aggregate of an aggregate”. Here is the result table to make testing easier:dte

	Customer Name	Customer Telephone Number	Total Number of Items Ordered
1	Candiller, Kathy	(619) 881-3929	245

8. Which game is the most popular seller to customers in Nevada? Identify the most popular game based on the total quantity sold of the game to customers in the state. Use the state in the customer table to determine the location of the customer. Use the largest sum of the quantity ordered to determine the most popular game. Here is the result table:

	ItemID	ItemDescription	TotalQuantityOrdered	LastCost	LastCostDate
1	B78244	Code Names	39	14.50	Jul 15, 2015

9. Create a listing of information about each and every item in the item table; there should be one row in the result table for each row in the item table. The information should include cost data, such as the average and most expensive and least expensive costs for an item in the ItemCostHistory table, as well as the most recent date an item was purchased in the past, and the cost for that date. The information should also include current data from the OrderLine table, including the average and most and least expensive prices paid. The result table is provided below.

	ItemID	ItemDescription	CategoryDescription	TotalQtyOnOrder	NumberOfOrders	MostExpensivePrice	LeastExpensivePrice	AveragePrice	MostExpensiveCost	LeastExpensiveCost	AverageCost	LastCostDate	MostCurrentCost
1	A23441	New York City Monopoly Game Colle...	Classic Board Games	64	3	29.95	29.95	29.95	12.50	10.25	10.9383	Feb 02, 2016	12.50
2	A23771	Mysterium	Science Fiction and Fantasy	33	4	145.99	122.99	135.24	8.50	8.50	8.50	Jul 23, 2013	8.50
3	A34665	Boggle Deluxe 5x5	Classic Board Games	147	6	37.95	23.95	33.625	15.00	14.35	14.6166	Dec 28, 2015	14.35
4	A34882	Perudo	Classic Board Games	102	4	11.95	7.95	10.20	12.50	6.50	9.50	Feb 05, 2016	12.50
5	A45111	How to Host a Murder - An Affair to ...	Mystery and Thrillers	0	0	0.00	0.00	0.00	0.00	0.00	0.00	No Previous Purchase	0.00
6	B67123	Tiny Epic Galaxies	Science Fiction and Fantasy	53	5	389.99	14.95	103.974	21.80	14.50	17.40	Feb 02, 2016	21.80
7	B67466	Diplomacy: Game of Negotiation, Cu...	Office and Team Building	26	4	43.95	40.95	42.70	31.00	22.50	27.4666	Sep 12, 2015	31.00
8	B78244	Code Names	Mystery and Thrillers	40	3	19.95	17.99	18.9633	14.50	14.50	14.50	Jul 15, 2015	14.50
9	B78500	Pandemic Legacy	Science Fiction and Fantasy	0	0	0.00	0.00	0.00	22.35	18.00	20.075	Feb 10, 2016	22.35
10	C26133	Knowledge Management: Create a ...	Office and Team Building	21	4	398.95	380.00	392.7125	225.00	200.00	213.0625	Feb 15, 2016	212.25
11	C29179	Managing Change: The Game for a...	Office and Team Building	16	4	280.00	259.95	268.9725	160.00	158.85	159.425	Jan 17, 2016	158.85
12	C34122	A Game of Strategy, Negotiation and...	Office and Team Building	19	4	269.95	167.95	201.9625	58.50	45.00	50.625	Feb 02, 2016	58.50

10. Which orders have been fully shipped? Include those orders that have items that have been overshipped in this query. DO NOT list the items on the order – only list the information shown on the sample output. List the orderID, orderdate, customerid, customer name, the primary orderID related to the order, and the order date of the primary order, the first date that anything was shipped for that order and the last date that anything was shipped for that order for all orders that have been fully shipped. Hints: I recommend using a view to determine which orders have been fully shipped. I recommend using correlated sub-queries in the SELECT list to determine the first and last DateShipped columns. The description of this query may be confusing, so here is the output result table to help better understand the intent:

	orderid	OrderDate	customerid	CustomerName	PrimaryOrderID	PrimaryOrderDate	FirstDateShipped	LastDateShipped
1	123000	Feb 02, 2016	00405	Barrington, M.	N/A	No Primary Order	Feb 15, 2016	Feb 25, 2016
2	300221	Jan 26, 2016	07831	Rodriguez, K.	567123	Jan 15, 2016	Feb 05, 2016	Feb 20, 2016
3	445511	Feb 15, 2016	32018	Jones, M.	N/A	No Primary Order	Feb 16, 2016	Feb 16, 2016
4	651222	Jan 29, 2016	12006	Martinez, G.	N/A	No Primary Order	Feb 22, 2016	Mar 19, 2016
5	671100	Feb 10, 2016	32018	Jones, M.	N/A	No Primary Order	Feb 25, 2016	Feb 25, 2016
6	980001	Jan 22, 2016	78112	Guili, M.	N/A	No Primary Order	Feb 05, 2016	Feb 06, 2016

11. Which items in the database have an insufficient quantity on hand to fill all outstanding orders for that item? Remember, some of the items on some of the orders have already been shipped, so make sure that you use only the open and partially filled orders for this query. The ItemLocation table stores the quantity on hand for each item by location. I recommend that you sum the quantity on hand by item in the ItemLocation table to determine the total quantity on hand available for shipments. Here is the result table:

	ItemID	ItemDescription	Total Left to Ship	Total Available in Inventory	Quantity Short
1	A23771	Mysterium	17	15	2
2	B67466	Diplomacy: Game of Negotiation, Cunning and Deceit.	15	7	8

IS 475/675 HW#8 Time Sheet

Name: _____ Working in a Group? Yes/No _____

Date	Hours		Date	Hours

Time Estimate: _____

How many hours do you think
it will take you to finish this
assignment?

Total Time Spent = _____