

## IS475/675 HW#8

### Using SQL with Multiple Tables in a SELECT statement

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Each of the questions below requires you to create a SELECT statement to satisfy the request. There are 15 questions for this assignment. Creating an accurate result table is your primary goal for all of the questions. An accurate result table includes not only selecting the correct rows, but also conversion of fields to the appropriate data type (for example, converting a calculated or aggregated field to a MONEY data type when necessary) and sorting the result table. I recommend focusing first on getting the right rows in the result table and then selecting the correct columns.

#### ***Deliverables***

Turn in two deliverables to WebCampus for this assignment: (1) A Word document containing the same output structure as that detailed on HW#7 and a (2) time sheet (one per member of a team if you are working as part of a team – there is a sample time sheet included at the end of this assignment). Include the name of the database on the first page of the Word document that should be used to test your code, if necessary.

#### ***Here are the query questions:***

1. List all purchase orders in the PurchaseOrder table with a PODateNeeded (Date of Required Delivery in the result table below) in October or November of the current year. Make sure your query uses the current year from GETDATE, rather than hard coding the year “2019” in the WHERE clause. Sort the orders by PODateNeeded so that the orders needed in November are displayed first (descending order). The full result table is shown below.

	Date of Required Delivery	Purchase Order Number	Date of Purchase Order	Vendor Name	Vendor Phone Number	Buyer ID
1	Nov 15, 2019	661677	Sep 30, 2019	PolySort Manufacturing	(303) 555-8123	E10101
2	Nov 12, 2019	781900	Oct 03, 2019	Apex Mills	(775) 555-2894	E10055
3	Oct 25, 2019	112233	Sep 21, 2019	Albemarle Corporation	(775) 555-3451	E10026
4	Oct 18, 2019	902347	Sep 16, 2019	Apex Mills	(775) 555-2894	E10087
5	Oct 15, 2019	256887	Sep 19, 2019	Recycle Plastics Company	(313) 555-4266	NULL
6	Oct 05, 2019	453313	Sep 19, 2019	Albemarle Corporation	(775) 555-3451	E10015

2. Modify the query written for question #1 to replace the Buyer ID in the result table with the name of the employee who was the buyer for the purchase order. If the buyer is null, display the message “No Buyer” in the column. Result table:

	Date of Required Delivery	Purchase Order Number	Date of Purchase Order	Vendor Name	Vendor Phone Number	Buyer Name
1	Nov 15, 2019	661677	Sep 30, 2019	PolySort Manufacturing	(303) 555-8123	Dilshad Dabiri
2	Nov 12, 2019	781900	Oct 03, 2019	Apex Mills	(775) 555-2894	Hai Jun Huang
3	Oct 25, 2019	112233	Sep 21, 2019	Albemarle Corporation	(775) 555-3451	Lieu Nguyen
4	Oct 18, 2019	902347	Sep 16, 2019	Apex Mills	(775) 555-2894	Aarav Agarwal
5	Oct 15, 2019	256887	Sep 19, 2019	Recycle Plastics Company	(313) 555-4266	No Buyer
6	Oct 05, 2019	453313	Sep 19, 2019	Albemarle Corporation	(775) 555-3451	Sam Fetters

3. Enhance the query written for question #2 to include the name of the manager for the employee who was the buyer for the purchase order. If the employee does not have a manager, display the message “No Manager” in the column. Result table:

	Date of Required Delivery	Purchase Order Number	Date of Purchase Order	Vendor Name	Vendor Phone Number	Buyer Name	Manager Name
1	Nov 15, 2019	661677	Sep 30, 2019	PolySort Manufacturing	(303) 555-8123	Dilshad Dabiri	Lieu Nguyen
2	Nov 12, 2019	781900	Oct 03, 2019	Apex Mills	(775) 555-2894	Hai Jun Huang	No Manager
3	Oct 25, 2019	112233	Sep 21, 2019	Albemarle Corporation	(775) 555-3451	Lieu Nguyen	Sam Fetters
4	Oct 18, 2019	902347	Sep 16, 2019	Apex Mills	(775) 555-2894	Aarav Agarwal	Lieu Nguyen
5	Oct 15, 2019	256887	Sep 19, 2019	Recycle Plastics Company	(313) 555-4266	No Buyer	No Manager
6	Oct 05, 2019	453313	Sep 19, 2019	Albemarle Corporation	(775) 555-3451	Sam Fetters	Mumtaz Shamsudeen

4. New query! List information about products in the Receiver table that have been received that were “damaged” (any product that was received where the description of the condition when received has the word “damage” anywhere in it; assume that you don’t know the different types of “damage” that could occur in the data). Sort the output in ascending order by ProductID, and datereceived. Be sure to use the description of the condition (the one word “damage”), rather than the condition ID, in the WHERE clause of the query. Result table:

	Product ID	Date Product Received	Purchase Order Number	Quantity Received	Condition Received
1	C2399	Sep 07, 2019	234607	13.00	Freight damage
2	C2399	Sep 12, 2019	234607	40.00	Water damage
3	C2399	Sep 14, 2019	045687	11.00	Freight damage
4	G0983	Sep 07, 2019	234607	200.00	Water damage
5	G0983	Sep 25, 2019	543791	50.00	Freight damage
6	G0983	Sep 29, 2019	543791	20.00	Freight damage
7	G0983	Oct 15, 2019	600124	10.00	Water damage
8	J8006	Sep 26, 2019	453313	125.50	Water damage
9	M3577	Aug 17, 2019	025974	100.00	Water damage
10	M3577	Oct 25, 2019	112233	340.50	Water damage
11	T0460	Oct 09, 2019	543791	10.00	Water damage

5. Enhance the answer to question #4 to include the product description, product type description, name and phone number of the vendor for the related purchase order. This query requires that you join in quite a few more tables. I recommend that you do it incrementally adding in one table at a time so that you don't change the total number of rows generated in the result table. Result table:

	Product ID	Product Description	Product Type Description	Date Product Received	Purchase Order Number	Vendor Name	Vendor Phone Number	Quantity Received	Condition Received
1	C2399	Thermoplastic	Camping and Resting	Sep 07, 2019	234607	Albemarle Corporation	(775) 555-3451	13.00	Freight damage
2	C2399	Thermoplastic	Camping and Resting	Sep 12, 2019	234607	Albemarle Corporation	(775) 555-3451	40.00	Water damage
3	C2399	Thermoplastic	Camping and Resting	Sep 14, 2019	045687	PolySort Manufacturing	(303) 555-8123	11.00	Freight damage
4	G0983	Alpine Small Pot	Hiking and Trails	Sep 07, 2019	234607	Albemarle Corporation	(775) 555-3451	200.00	Water damage
5	G0983	Alpine Small Pot	Hiking and Trails	Sep 25, 2019	543791	Celanette Design, LLC	(310) 555-5545	50.00	Freight damage
6	G0983	Alpine Small Pot	Hiking and Trails	Sep 29, 2019	543791	Celanette Design, LLC	(310) 555-5545	20.00	Freight damage
7	G0983	Alpine Small Pot	Hiking and Trails	Oct 15, 2019	600124	PolySort Manufacturing	(303) 555-8123	10.00	Water damage
8	J8006	Microfilter tubing	Miscellaneous	Sep 26, 2019	453313	Albemarle Corporation	(775) 555-3451	125.50	Water damage
9	M3577	Cot Mesh - Sturdy	Miscellaneous	Aug 17, 2019	025974	Alcan Plastic, Inc.	(907) 555-5268	100.00	Water damage
10	M3577	Cot Mesh - Sturdy	Miscellaneous	Oct 25, 2019	112233	Albemarle Corporation	(775) 555-3451	340.50	Water damage
11	T0460	Alpine Water Bottle	Camping and Cooking	Oct 09, 2019	543791	Celanette Design, LLC	(310) 555-5545	10.00	Water damage

6. New query (but similar to #5 so I recommend that you use the code from #5 as the base). Write a query that lists the name and phone number of those vendors from whom MountainDesign received damaged goods for the product Alpine Small Pot. Make sure you use the name of the product (Alpine Small Pot) rather than the productID in the WHERE clause. Result table:

	Vendor Name	Vendor Phone Number
1	Albemarle Corporation	(775) 555-3451
2	Celanette Design, LLC	(310) 555-5545
3	PolySort Manufacturing	(303) 555-8123

7. Time for a totally new group function-related query. Create a summarized report listing information about each product in the product table. Include a count of how many purchase orders contain the product on order and the maximum, minimum, and average price that the product has on order within the PurchaseOrderLine table. Also include a total of the quantity on order for each product. If a product is not in the PurchaseOrderLine table, then the totals should be zero. Sort the result table by ProductID. Result table:

	productid	description	Number of Purchase Orders	Total Quantity Ordered	Maximum Price Paid	Minimum Price Paid	Average Price Paid
1	A7879	Canvas, Non-Woven	0	0	0.00	0.00	0.00
2	B9812	Single Bumer Alcohol Fueled	1	25	9.99	8.99	9.66
3	C2399	Thermoplastic	3	135	2.99	1.75	2.41
4	C8733	Nylon Cover	0	0	0.00	0.00	0.00
5	C9100	Unbleached Muslin	1	800	3.45	3.45	3.45
6	G0983	Alpine Small Pot	5	755	2.25	1.50	2.04
7	G1258	Alpine Pot/Kettle Handle	0	0	0.00	0.00	0.00
8	G1366	Alpine Pot/Kettle Insert	3	380	4.89	1.89	3.88
9	G5698	Alpine Skillet Handle Set	3	342	2.38	1.22	1.86
10	J8006	Microfilter tubing	1	501	1.07	1.02	1.04
11	L8500	Hiking Lounge Seating - Blue	2	23	29.64	26.45	28.05
12	L8501	Hiking Lounge Seating - Gray	0	0	0.00	0.00	0.00
13	M2356	Cot Mesh - Ultralite	0	0	0.00	0.00	0.00
14	M3577	Cot Mesh - Sturdy	4	2550	5.89	4.63	5.34
15	O1957	Poly pro tubing, 1/2"	3	1050	0.46	0.29	0.39
16	P5678	Stuff Sacks - Pillow Size	1	48	22.50	22.50	22.50
17	P7844	Down Baffle Liner	1	500	1.50	1.50	1.50
18	R5660	Water Filtration Pump	2	175	1.99	1.59	1.79
19	T0460	Alpine Water Bottle	5	1090	3.10	1.39	2.32

8. List detailed information about all products on order for all the purchase orders in the purchase order table. There should be one row in your result table for each row in the PurchaseOrderLine table. Include the purchase order number, the date the purchase order was placed, the name of the vendor, the employee who placed that purchase order (the buyer) and each of the products on the order. For each product on an order, list the productID, product description, date needed, quantity ordered, the product price and the extended price (quantity \* price). If there is no buyer for a given purchase order, include a message in the name field. Sort the result table by productID within POnumber.

	Purchase Order Number	Date of Purchase Order	Vendor Name	Buyer	Product ID	Product Description	Product Date Needed	Quantity Ordered	Unit Price	Extended Price
1	025974	Aug 15, 2019	Alcan Plastic, Inc.	Fetters, S.	M3577	Cot Mesh - Sturdy	Aug 18, 2019	600.00	4.63	2778.00
2	025974	Aug 15, 2019	Alcan Plastic, Inc.	Fetters, S.	O1957	Poly pro tubing, 1/2"	Aug 18, 2019	300.00	0.46	138.00
3	045687	Aug 21, 2019	PolySort Manufacturing	Huang, H.	C2399	Thermoplastic	Sep 05, 2019	40.00	2.99	119.60
4	045687	Aug 21, 2019	PolySort Manufacturing	Huang, H.	L8500	Hiking Lounge Seating - Blue	Sep 10, 2019	15.00	29.64	444.60
5	045687	Aug 21, 2019	PolySort Manufacturing	Huang, H.	O1957	Poly pro tubing, 1/2"	Sep 12, 2019	450.00	0.29	130.50
6	056489	Aug 04, 2019	Injectomatic Mold Corp.	Huang, H.	M3577	Cot Mesh - Sturdy	Aug 15, 2019	600.00	5.29	3174.00
7	112233	Sep 21, 2019	Albemar Corporation	Nguyen, L.	M3577	Cot Mesh - Sturdy	Oct 07, 2019	600.60	5.89	3537.534
8	112233	Sep 21, 2019	Albemar Corporation	Nguyen, L.	P7844	Down Baffle Liner	Sep 24, 2019	500.25	1.50	750.375
9	234607	Sep 04, 2019	Albemar Corporation	Huang, H.	C2399	Thermoplastic	Sep 06, 2019	75.00	1.75	131.25
10	234607	Sep 04, 2019	Albemar Corporation	Huang, H.	G0983	Alpine Small Pot	Sep 08, 2019	200.00	1.50	300.00
11	234607	Sep 04, 2019	Albemar Corporation	Huang, H.	G1366	Alpine Pot/Kettle Insert	Sep 10, 2019	182.00	4.89	889.98
12	234607	Sep 04, 2019	Albemar Corporation	Huang, H.	G5698	Alpine Skillet Handle Set	Sep 19, 2019	182.00	1.22	222.04
13	234607	Sep 04, 2019	Albemar Corporation	Huang, H.	R5660	Water Filtration Pump	Sep 26, 2019	100.00	1.99	199.00
14	234607	Sep 04, 2019	Albemar Corporation	Huang, H.	T0460	Alpine Water Bottle	Sep 26, 2019	200.00	2.75	550.00
15	256887	Sep 19, 2019	Recycle Plastics Company	No Buyer	C2399	Thermoplastic	Oct 15, 2019	20.00	2.50	50.00
16	256887	Sep 19, 2019	Recycle Plastics Company	No Buyer	P5678	Stuff Sacks - Pillow Size	Oct 15, 2019	48.00	22.50	1080.00
17	329987	Oct 10, 2019	Alcan Plastic, Inc.	Dabiri, D.	O1957	Poly pro tubing, 1/2"	Nov 15, 2019	300.00	0.41	123.00
18	329987	Oct 10, 2019	Alcan Plastic, Inc.	Dabiri, D.	T0460	Alpine Water Bottle	Jan 12, 2020	50.00	3.10	155.00
19	351211	Sep 09, 2019	BestCo Food Equipment	MacAndrews-Abemethy, E.	B9812	Single Burner Alcohol Fueled	Nov 12, 2019	15.00	8.99	134.85
20	351211	Sep 09, 2019	BestCo Food Equipment	MacAndrews-Abemethy, E.	B9812	Single Burner Alcohol Fueled	Jan 12, 2020	5.00	9.99	49.95
21	351211	Sep 09, 2019	BestCo Food Equipment	MacAndrews-Abemethy, E.	B9812	Single Burner Alcohol Fueled	Mar 08, 2020	5.00	9.99	49.95
22	365870	Sep 14, 2019	Albemar Corporation	Dabiri, D.	G0983	Alpine Small Pot	Dec 14, 2019	120.00	1.85	222.00
23	365870	Sep 14, 2019	Albemar Corporation	Dabiri, D.	R5660	Water Filtration Pump	Nov 10, 2019	75.00	1.59	119.25
24	365870	Sep 14, 2019	Albemar Corporation	Dabiri, D.	T0460	Alpine Water Bottle	Mar 14, 2020	120.00	2.39	286.80
25	453313	Sep 19, 2019	Albemar Corporation	Fetters, S.	J8006	Microfilter tubing	Sep 26, 2019	125.50	1.02	128.01
26	453313	Sep 19, 2019	Albemar Corporation	Fetters, S.	J8006	Microfilter tubing	Sep 28, 2019	275.50	1.02	281.01
27	453313	Sep 19, 2019	Albemar Corporation	Fetters, S.	J8006	Microfilter tubing	Oct 05, 2019	100.00	1.07	107.00
28	543791	Sep 15, 2019	Celanette Design, LLC	Huang, H.	G0983	Alpine Small Pot	Sep 17, 2019	100.00	1.89	189.00
29	543791	Sep 15, 2019	Celanette Design, LLC	Huang, H.	G0983	Alpine Small Pot	Sep 28, 2019	20.00	2.19	43.80
30	543791	Sep 15, 2019	Celanette Design, LLC	Huang, H.	G0983	Alpine Small Pot	Oct 02, 2019	20.00	2.25	45.00
31	543791	Sep 15, 2019	Celanette Design, LLC	Huang, H.	G0983	Alpine Small Pot	Oct 12, 2019	25.00	2.25	56.25
32	543791	Sep 15, 2019	Celanette Design, LLC	Huang, H.	G0983	Alpine Small Pot	Nov 15, 2019	45.00	2.15	96.75
33	543791	Sep 15, 2019	Celanette Design, LLC	Huang, H.	G0983	Alpine Small Pot	Dec 10, 2019	25.00	2.15	53.75
34	543791	Sep 15, 2019	Celanette Design, LLC	Huang, H.	G1366	Alpine Pot/Kettle Insert	Jan 10, 2020	48.00	1.89	90.72
35	543791	Sep 15, 2019	Celanette Design, LLC	Huang, H.	G5698	Alpine Skillet Handle Set	Oct 15, 2019	12.00	1.95	23.40
36	543791	Sep 15, 2019	Celanette Design, LLC	Huang, H.	G5698	Alpine Skillet Handle Set	Jan 10, 2020	48.00	2.38	114.24
37	543791	Sep 15, 2019	Celanette Design, LLC	Huang, H.	T0460	Alpine Water Bottle	Oct 12, 2019	120.00	1.89	226.80
38	543791	Sep 15, 2019	Celanette Design, LLC	Huang, H.	T0460	Alpine Water Bottle	Dec 15, 2019	50.00	2.49	124.50
39	600124	Oct 01, 2019	PolySort Manufacturing	Huang, H.	G0983	Alpine Small Pot	Oct 18, 2019	100.00	1.96	196.00
40	600124	Oct 01, 2019	PolySort Manufacturing	Huang, H.	G1366	Alpine Pot/Kettle Insert	Oct 18, 2019	150.00	4.85	727.50
41	600124	Oct 01, 2019	PolySort Manufacturing	Huang, H.	G5698	Alpine Skillet Handle Set	Oct 18, 2019	100.00	1.87	187.00
42	661677	Sep 30, 2019	PolySort Manufacturing	Dabiri, D.	L8500	Hiking Lounge Seating - Blue	Nov 15, 2019	8.00	26.45	211.60
43	781900	Oct 03, 2019	Apex Mills	Huang, H.	C9100	Unbleached Muslin	Oct 15, 2019	800.00	3.45	2760.00
44	781900	Oct 03, 2019	Apex Mills	Huang, H.	M3577	Cot Mesh - Sturdy	Nov 10, 2019	750.00	5.55	4162.50
45	902347	Sep 16, 2019	Apex Mills	Agarwal, A.	G0983	Alpine Small Pot	Oct 15, 2019	100.00	2.25	225.00
46	902347	Sep 16, 2019	Apex Mills	Agarwal, A.	T0460	Alpine Water Bottle	Sep 22, 2019	100.00	2.25	225.00
47	902347	Sep 16, 2019	Apex Mills	Agarwal, A.	T0460	Alpine Water Bottle	Dec 05, 2019	450.00	1.39	625.50



9. The purpose of this next question is to understand the content of the data in the database – it is kind of a preliminary step to move between query #8 and query #10.

Each row in the PurchaseOrderLine table represents a product purchased on a purchase order. For each row in the PurchaseOrderLine table, it is possible to have multiple rows in the Receiver table. In other words, it is possible to receive a partial shipment for a product on an order. Modify the query written for question #8 to include the qtyreceived and datereceived in the Receiver table for each product in the PurchaseOrderLine table. It is possible that no products have been received for a given row in the PurchaseOrderLine table, but those rows should still be included in the result table. To make the output fit on a page, remove the unit price and extended price from the result table created for question #8. The first 25 rows of the result table are included below. Hint: There should be a total of 70 rows in the result table.

	Purchase Order Number	Date of Purchase Order	Vendor Name	Buyer	Product ID	Product Description	Product Date Needed	Quantity Ordered	Date Product Received	Quantity Received
1	025974	Aug 15, 2019	Alcan Plastic, Inc.	Fetters, S.	M3577	Cot Mesh - Sturdy	Aug 18, 2019	600.00	Aug 15, 2019	400.00
2	025974	Aug 15, 2019	Alcan Plastic, Inc.	Fetters, S.	M3577	Cot Mesh - Sturdy	Aug 18, 2019	600.00	Aug 16, 2019	100.00
3	025974	Aug 15, 2019	Alcan Plastic, Inc.	Fetters, S.	M3577	Cot Mesh - Sturdy	Aug 18, 2019	600.00	Aug 17, 2019	100.00
4	025974	Aug 15, 2019	Alcan Plastic, Inc.	Fetters, S.	O1957	Poly pro tubing, 1/2"	Aug 18, 2019	300.00	Aug 15, 2019	100.00
5	025974	Aug 15, 2019	Alcan Plastic, Inc.	Fetters, S.	O1957	Poly pro tubing, 1/2"	Aug 18, 2019	300.00	Aug 17, 2019	210.00
6	045687	Aug 21, 2019	PolySort Manufacturing	Huang, H.	C2399	Thermoplastic	Sep 05, 2019	40.00	Sep 05, 2019	40.00
7	045687	Aug 21, 2019	PolySort Manufacturing	Huang, H.	C2399	Thermoplastic	Sep 05, 2019	40.00	Sep 14, 2019	11.00
8	045687	Aug 21, 2019	PolySort Manufacturing	Huang, H.	L8500	Hiking Lounge Seating - Blue	Sep 10, 2019	15.00	Not Received	0.00
9	045687	Aug 21, 2019	PolySort Manufacturing	Huang, H.	O1957	Poly pro tubing, 1/2"	Sep 12, 2019	450.00	Sep 05, 2019	400.00
10	045687	Aug 21, 2019	PolySort Manufacturing	Huang, H.	O1957	Poly pro tubing, 1/2"	Sep 12, 2019	450.00	Sep 15, 2019	40.00
11	056489	Aug 04, 2019	Injectomatic Mold Corp.	Huang, H.	M3577	Cot Mesh - Sturdy	Aug 15, 2019	600.00	Not Received	0.00
12	112233	Sep 21, 2019	Albemarle Corporation	Nguyen, L.	M3577	Cot Mesh - Sturdy	Oct 07, 2019	600.60	Sep 28, 2019	300.45
13	112233	Sep 21, 2019	Albemarle Corporation	Nguyen, L.	M3577	Cot Mesh - Sturdy	Oct 07, 2019	600.60	Oct 25, 2019	340.50
14	112233	Sep 21, 2019	Albemarle Corporation	Nguyen, L.	P7844	Down Baffle Liner	Sep 24, 2019	500.25	Sep 23, 2019	475.25
15	234607	Sep 04, 2019	Albemarle Corporation	Huang, H.	C2399	Thermoplastic	Sep 06, 2019	75.00	Sep 07, 2019	13.00
16	234607	Sep 04, 2019	Albemarle Corporation	Huang, H.	C2399	Thermoplastic	Sep 06, 2019	75.00	Sep 08, 2019	22.00
17	234607	Sep 04, 2019	Albemarle Corporation	Huang, H.	C2399	Thermoplastic	Sep 06, 2019	75.00	Sep 12, 2019	40.00
18	234607	Sep 04, 2019	Albemarle Corporation	Huang, H.	G0983	Alpine Small Pot	Sep 08, 2019	200.00	Sep 07, 2019	200.00
19	234607	Sep 04, 2019	Albemarle Corporation	Huang, H.	G1366	Alpine Pot/Kettle Insert	Sep 10, 2019	182.00	Sep 07, 2019	150.00
20	234607	Sep 04, 2019	Albemarle Corporation	Huang, H.	G1366	Alpine Pot/Kettle Insert	Sep 10, 2019	182.00	Sep 10, 2019	25.00
21	234607	Sep 04, 2019	Albemarle Corporation	Huang, H.	G1366	Alpine Pot/Kettle Insert	Sep 10, 2019	182.00	Sep 14, 2019	7.00
22	234607	Sep 04, 2019	Albemarle Corporation	Huang, H.	G5698	Alpine Skillet Handle Set	Sep 19, 2019	182.00	Sep 22, 2019	182.00
23	234607	Sep 04, 2019	Albemarle Corporation	Huang, H.	R5660	Water Filtration Pump	Sep 26, 2019	100.00	Sep 22, 2019	50.00
24	234607	Sep 04, 2019	Albemarle Corporation	Huang, H.	R5660	Water Filtration Pump	Sep 26, 2019	100.00	Sep 26, 2019	50.00
25	234607	Sep 04, 2019	Albemarle Corporation	Huang, H.	T0460	Alpine Water Bottle	Sep 26, 2019	200.00	Sep 22, 2019	200.00

10. Look at the output from the query created to answer #9 on the previous page. Notice that sometimes it takes multiple shipments to receive the complete quantity ordered for a given product on a purchase order. For example, look at purchase order #025974 for productID M3577. MountainDesign ordered a quantity of 600 of that product on that purchase order, all due by August 18, 2019. They received three different shipments of that product – one on Aug. 15 for a quantity of 400, one on Aug. 16 for a quantity of 100, and one on Aug. 17 for a quantity of 100. MountainDesign received a total quantity of 600, but it is difficult to see that information on the query created to answer question #9. You are going to fix that difficult-to-read information with this query.

Summarize the receiving status of every row in the PurchaseOrderLine table. Sort the output by ponumber, productID, and dateneeded.

To simplify the output, remove some of the columns required in question #9. Include only the PONumber, ProductID, Product Description, Date Needed, Vendor Name and QtyOrdered on the output. In addition, calculate (sum) the total quantity received for a given product with a given date needed on a given purchase order, and the quantity left to receive (QtyOrdered – sum of quantity received). If a product has not yet been received, then put a zero in the total quantity received. Determine the shipping status for each line based on the difference between the quantity ordered and the total quantity received according to the following chart:

Difference	Receiving Status
qtyordered – sum of quantity received = 0	Complete
qtyordered – sum of quantity received < 0	Over Shipment
qtyordered – sum of quantity received > 0	Partial Shipment
sum of quantity received = 0	Not Received

Some hints: There should be one row in the result table for each row in the tblPurchaseOrderLine. The GROUP BY is the easiest way to solve this query. Build this query incrementally. Get the grouping (SUM) to work correctly before attempting to create the “receiving status” column. When an aggregate function, like a SUM, is used within a calculation in a column in the SELECT list, then the column is considered to be an aggregate and doesn’t have to be included in the GROUP BY statement. Use the CASE statement in the SELECT list to create the information in the “receiving status” column.

The complete result table is provided on the next page.

	Purchase Order Number	Vendor Name	Product ID	Product Description	Product Date Needed	Quantity Ordered	Total Quantity Received	Quantity Remaining to be Received	Receiving Status
1	025974	Alcan Plastic, Inc.	M3577	Cot Mesh - Sturdy	Aug 18, 2019	600.00	600.00	0.00	Complete
2	025974	Alcan Plastic, Inc.	O1957	Poly pro tubing, 1/2"	Aug 18, 2019	300.00	310.00	-10.00	Over Shipment
3	045687	PolySort Manufacturing	C2399	Thermoplastic	Sep 05, 2019	40.00	51.00	-11.00	Over Shipment
4	045687	PolySort Manufacturing	L8500	Hiking Lounge Seating - Blue	Sep 10, 2019	15.00	0.00	15.00	Not Received
5	045687	PolySort Manufacturing	O1957	Poly pro tubing, 1/2"	Sep 12, 2019	450.00	440.00	10.00	Partial Shipment
6	056489	Injectomatic Mold Corp.	M3577	Cot Mesh - Sturdy	Aug 15, 2019	600.00	0.00	600.00	Not Received
7	112233	Albemarle Corporation	M3577	Cot Mesh - Sturdy	Oct 07, 2019	600.60	640.95	-40.35	Over Shipment
8	112233	Albemarle Corporation	P7844	Down Baffle Liner	Sep 24, 2019	500.25	475.25	25.00	Partial Shipment
9	234607	Albemarle Corporation	C2399	Thermoplastic	Sep 06, 2019	75.00	75.00	0.00	Complete
10	234607	Albemarle Corporation	G0983	Alpine Small Pot	Sep 08, 2019	200.00	200.00	0.00	Complete
11	234607	Albemarle Corporation	G1366	Alpine Pot/Kettle Insert	Sep 10, 2019	182.00	182.00	0.00	Complete
12	234607	Albemarle Corporation	G5698	Alpine Skillet Handle Set	Sep 19, 2019	182.00	182.00	0.00	Complete
13	234607	Albemarle Corporation	R5660	Water Filtration Pump	Sep 26, 2019	100.00	100.00	0.00	Complete
14	234607	Albemarle Corporation	T0460	Alpine Water Bottle	Sep 26, 2019	200.00	200.00	0.00	Complete
15	256887	Recycle Plastics Company	C2399	Thermoplastic	Oct 15, 2019	20.00	20.00	0.00	Complete
16	256887	Recycle Plastics Company	P5678	Stuff Sacks - Pillow Size	Oct 15, 2019	48.00	49.00	-1.00	Over Shipment
17	329987	Alcan Plastic, Inc.	O1957	Poly pro tubing, 1/2"	Nov 15, 2019	300.00	0.00	300.00	Not Received
18	329987	Alcan Plastic, Inc.	T0460	Alpine Water Bottle	Jan 12, 2020	50.00	0.00	50.00	Not Received
19	351211	BestCo Food Equipment	B9812	Single Burner Alcohol Fueled	Nov 12, 2019	15.00	10.00	5.00	Partial Shipment
20	351211	BestCo Food Equipment	B9812	Single Burner Alcohol Fueled	Jan 12, 2020	5.00	0.00	5.00	Not Received
21	351211	BestCo Food Equipment	B9812	Single Burner Alcohol Fueled	Mar 08, 2020	5.00	0.00	5.00	Not Received
22	365870	Albemarle Corporation	G0983	Alpine Small Pot	Dec 14, 2019	120.00	0.00	120.00	Not Received
23	365870	Albemarle Corporation	R5660	Water Filtration Pump	Nov 10, 2019	75.00	0.00	75.00	Not Received
24	365870	Albemarle Corporation	T0460	Alpine Water Bottle	Mar 14, 2020	120.00	0.00	120.00	Not Received
25	453313	Albemarle Corporation	J8006	Microfilter tubing	Sep 26, 2019	125.50	125.50	0.00	Complete
26	453313	Albemarle Corporation	J8006	Microfilter tubing	Sep 28, 2019	275.50	275.50	0.00	Complete
27	453313	Albemarle Corporation	J8006	Microfilter tubing	Oct 05, 2019	100.00	0.00	100.00	Not Received
28	543791	Celanette Design, LLC	G0983	Alpine Small Pot	Sep 17, 2019	100.00	100.00	0.00	Complete
29	543791	Celanette Design, LLC	G0983	Alpine Small Pot	Sep 28, 2019	20.00	20.00	0.00	Complete
30	543791	Celanette Design, LLC	G0983	Alpine Small Pot	Oct 02, 2019	20.00	20.00	0.00	Complete
31	543791	Celanette Design, LLC	G0983	Alpine Small Pot	Oct 12, 2019	25.00	25.00	0.00	Complete
32	543791	Celanette Design, LLC	G0983	Alpine Small Pot	Nov 15, 2019	45.00	0.00	45.00	Not Received
33	543791	Celanette Design, LLC	G0983	Alpine Small Pot	Dec 10, 2019	25.00	0.00	25.00	Not Received
34	543791	Celanette Design, LLC	G1366	Alpine Pot/Kettle Insert	Jan 10, 2020	48.00	0.00	48.00	Not Received
35	543791	Celanette Design, LLC	G5698	Alpine Skillet Handle Set	Oct 15, 2019	12.00	12.00	0.00	Complete
36	543791	Celanette Design, LLC	G5698	Alpine Skillet Handle Set	Jan 10, 2020	48.00	0.00	48.00	Not Received
37	543791	Celanette Design, LLC	T0460	Alpine Water Bottle	Oct 12, 2019	120.00	120.00	0.00	Complete
38	543791	Celanette Design, LLC	T0460	Alpine Water Bottle	Dec 15, 2019	50.00	0.00	50.00	Not Received
39	600124	PolySort Manufacturing	G0983	Alpine Small Pot	Oct 18, 2019	100.00	110.00	-10.00	Over Shipment
40	600124	PolySort Manufacturing	G1366	Alpine Pot/Kettle Insert	Oct 18, 2019	150.00	150.00	0.00	Complete
41	600124	PolySort Manufacturing	G5698	Alpine Skillet Handle Set	Oct 18, 2019	100.00	100.00	0.00	Complete
42	661677	PolySort Manufacturing	L8500	Hiking Lounge Seating - Blue	Nov 15, 2019	8.00	0.00	8.00	Not Received
43	781900	Apex Mills	C9100	Unbleached Muslin	Oct 15, 2019	800.00	0.00	800.00	Not Received
44	781900	Apex Mills	M3577	Cot Mesh - Sturdy	Nov 10, 2019	750.00	0.00	750.00	Not Received
45	902347	Apex Mills	G0983	Alpine Small Pot	Oct 15, 2019	100.00	100.00	0.00	Complete
46	902347	Apex Mills	T0460	Alpine Water Bottle	Sep 22, 2019	100.00	100.00	0.00	Complete
47	902347	Apex Mills	T0460	Alpine Water Bottle	Dec 05, 2019	450.00	100.00	350.00	Partial Shipment



11. New Query – this one will be much shorter than the one written for question #10! Which purchase orders have not had any products received? In other words, which purchase orders do not have any rows in the receiver table? Hint: This query is most easily accomplished with a join between the PurchaseOrder and Vendor tables, and then a subquery in the WHERE statement to figure out if the PONumber is in the Receiver table. Result table:

	Purchase Order Number	Date Purchase Order Placed	Date Needed	Terms	Vendor Number	Vendor Name
1	056489	2019-08-04 00:00:00.000	2019-08-15 00:00:00.000	NULL	36257	Injectomatic Mold Corp.
2	329987	2019-10-10 00:00:00.000	2020-01-12 00:00:00.000	Net 30	18567	Alcan Plastic, Inc.
3	365870	2019-09-14 00:00:00.000	2020-03-14 00:00:00.000	Net 30	17453	Albemarle Corporation
4	661677	2019-09-30 00:00:00.000	2019-11-15 00:00:00.000	Net 15	00216	PolySort Manufacturing
5	781900	2019-10-03 00:00:00.000	2019-11-12 00:00:00.000	NULL	09567	Apex Mills

12. New query! On which purchase order (or purchase orders) did MountainDesign (your company) pay the **lowest unit price** (price from the PurchaseOrderLine table) for the product Alpine Water Bottle? List the PONumber, ProductID, description of the product (from the Product table), and Price (from the PurchaseOrderLine table). Be sure to use the description of the product (Alpine Water Bottle), rather than the productID, in the WHERE clause(s). Do NOT use the SELECT TOP 1 option. Result table:

	ponumber	productid	description	price
1	902347	T0460	Alpine Water Bottle	1.39

13. Enhance the query written for question #12 to include the additional information (the name of the Vendor for the purchase order) as shown below.

	ponumber	VendorName	productid	description	price
1	902347	Apex Mills	T0460	Alpine Water Bottle	1.39

14. Enhance the query written for question #13 to include the additional information as shown below:

	ponumber	VendorName	PurchaseEmployee	PurchaseEmpManager	productid	description	ProductTypeDescription	price
1	902347	Apex Mills	Agarwal	Nguyen	T0460	Alpine Water Bottle	Camping and Cooking	1.39

15. The purpose of this query is to find out about the most **recent** purchase of a product from the PurchaseHistory table. The data for this query should NOT come from the PurchaseOrder or PurchaseOrderLine tables – they should come from the PurchaseHistory table and Product table. Include the productID, Product Description, Product EOQ, the most recent date that a product was purchased (from the PurchaseHistory table), the quantity that was purchased and the purchase price. Sort the result table by productID. Hints: This query is fairly short if written using a correlated sub-query or a view. A few of the products are not in the PurchaseHistory table, but need to be in the result table because all products in the Product table must be in the result table.

	Product ID	Product Description	Product Economic Order Quantity	Most Recent Purchase Date	Quantity Purchased	Purchase Price
1	A7879	Canvas, Non-Woven	2000.00	Mar 15 2019 12:00AM	7500.00	0.12
2	B9812	Single Bumer Alcohol Fueled	15.00	Not in Purchase History	--	--
3	C2399	Thermoplastic	10.00	Aug 12 2019 12:00AM	350.00	1.89
4	C8733	Nylon Cover	2000.00	Not in Purchase History	--	--
5	C9100	Unbleached Muslin	8000.00	Not in Purchase History	--	--
6	G0983	Alpine Small Pot	100.00	Mar 12 2019 12:00AM	75.00	2.15
7	G1258	Alpine Pot/Kettle Handle	50.00	Jul 21 2019 12:00AM	25.00	4.29
8	G1366	Alpine Pot/Kettle Insert	48.00	Jun 20 2019 12:00AM	25.00	4.81
9	G5698	Alpine Skillet Handle Set	48.00	Jun 20 2019 12:00AM	25.00	2.21
10	J8006	Microfilter tubing	450.00	Aug 12 2019 12:00AM	450.00	1.10
11	J8006	Microfilter tubing	450.00	Aug 12 2019 12:00AM	450.00	0.99
12	L8500	Hiking Lounge Seating - Blue	15.00	Dec 12 2018 12:00AM	10.00	26.22
13	L8501	Hiking Lounge Seating - Gray	10.00	Dec 12 2018 12:00AM	15.00	29.94
14	M2356	Cot Mesh - Ultralite	1000.00	Not in Purchase History	--	--
15	M3577	Cot Mesh - Sturdy	300.00	Jul 12 2019 12:00AM	150.00	6.35
16	O1957	Poly pro tubing, 1/2"	300.00	Jul 23 2019 12:00AM	200.00	0.43
17	P5678	Stuff Sacks - Pillow Size	48.00	Jun 12 2019 12:00AM	250.00	23.51
18	P7844	Down Baffle Liner	50.00	Jul 12 2019 12:00AM	2570.00	0.67
19	R5660	Water Filtration Pump	30.00	Jun 18 2019 12:00AM	4500.00	2.10
20	T0460	Alpine Water Bottle	100.00	Feb 19 2019 12:00AM	1500.00	1.98

**IS 475/675 HW#8 Time Sheet (keep track in ½ hour increments)**

Name: \_\_\_\_\_

Date	Hours		Date	Hours

Total Time Spent = \_\_\_\_\_