

CPSC 3131 / MISM 4135 - Assignment 5

The structure and contents of the Ch07_SaleCo database are shown in Figure 1. Use this database to answer the following problems.

Relational diagram

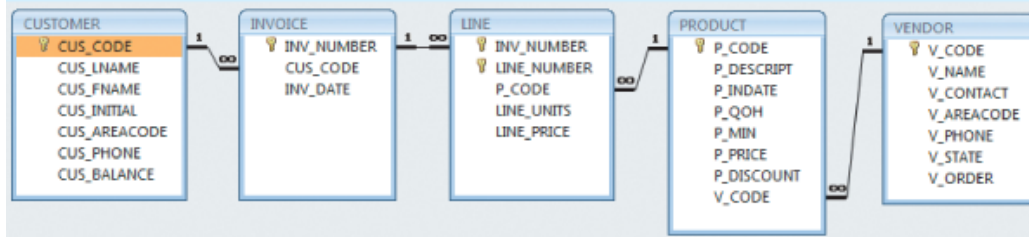


Table name: CUSTOMER

CUS_CODE	CUS_LNAME	CUS_FNAME	CUS_INITIAL	CUS_AREACODE	CUS_PHONE	CUS_BALANCE
10010	Ramirez	Alfred	A	615	844-2573	0.00
10011	Dunne	Leona	K	713	894-1238	0.00
10012	Smith	Kathy	W	615	894-2205	345.86
10013	Olowinski	Paul	F	615	884-2180	536.75
10014	Orlando	Myron		615	222-1672	0.00
10015	O'Brien	Amy	B	713	442-3301	0.00
10016	Brown	James	G	615	287-1228	221.19
10017	Williams	George		615	290-2556	768.93
10018	Farriss	Anne	O	713	382-7185	216.55
10019	Smith	Olette	K	615	297-3809	0.00

Table name: VENDOR

V_CODE	V_NAME	V_CONTACT	V_AREACODE	V_PHONE	V_STATE	V_ORDER
21225	Bryson, Inc.	Smithson	615	223-3234	TN	Y
21226	SuperLox, Inc.	Flushing	904	215-8995	FL	N
21231	D&E Supply	Singh	615	228-3245	TN	Y
21344	Gomez Bros.	Ortega	615	888-2546	KY	N
22587	Dome Supply	Smith	901	678-1419	GA	N
23119	Randssets Ltd.	Anderson	901	678-3996	GA	Y
24004	Brackman Bros.	Browning	615	228-1410	TN	N
24288	ORDVA, Inc.	Hakford	615	896-1234	TN	Y
25443	BSK, Inc.	Smith	904	227-0093	FL	N
25501	Daniel Supplies	Smythe	615	890-3529	TN	N
25505	Rubicon Systems	Orton	904	456-0092	FL	Y

Table name: INVOICE

INV_NUMBER	CUS_CODE	INV_DATE
1001	10014	15-Jan-14
1002	10011	15-Jan-14
1003	10012	16-Jan-14
1004	10011	17-Jan-14
1005	10018	17-Jan-14
1006	10014	17-Jan-14
1007	10015	17-Jan-14
1008	10011	17-Jan-14

Table name: LINE

INV_NUMBER	LINE_NUMBER	P_CODE	LINE_UNITS	LINE_PRICE
1001	1	113-Q2P2	1	14.99
1001	2	23109-HB	1	9.95
1002	1	54778-2T	2	4.99
1003	1	2238GPD	1	38.95
1003	2	1548-QG2	1	39.95
1003	3	113-Q2P2	5	14.99
1004	1	54778-2T	3	4.99
1004	2	23109-HB	2	9.95
1005	1	PVC23DRT	12	5.87
1006	1	SM-18277	3	6.89
1006	2	2232GTY	1	109.92
1006	3	23109-HB	1	9.95
1006	4	08-VVRE-Q	1	256.99
1007	1	113-Q2P2	2	14.99
1007	2	54778-2T	1	4.99
1008	1	PVC23DRT	5	5.87
1008	2	VIR3/TT3	3	119.95
1008	3	23109-HB	1	9.95

Table name: PRODUCT

P_CODE	P_DESCR1	P_INDATE	P_QOH	P_MIN	P_PRICE	P_DISCOUNT	V_CODE
1102R01	Power painter, 15 psi, 3-nozzle	03-Nov-13	8	5	109.99	0.00	25595
113-Q2P2	7.25-in. gen. sawblade	13-Dec-13	32	15	14.99	0.05	21344
14-Q1L3	9.00-in. gen. sawblade	13-Nov-13	18	12	17.99	0.00	21344
1548-QG2	Hnd. cloth, 14-in., 2x50	15-Jan-14	15	8	39.95	0.00	23119
1568-QM1	Hnd. cloth, 12-in., 2x50	15-Jan-14	23	5	43.99	0.00	23119
2232GTY	BAD jigsaw, 12-in. blade	30-Dec-13	8	5	109.92	0.05	24288
2232GTYE	BAD jigsaw, 8-in. blade	24-Dec-13	6	5	99.87	0.05	24288
2238GPD	BAD cordless drill, 12-in.	20-Jan-14	12	5	38.95	0.05	25505
23109-HB	Claw hammer	20-Jan-14	23	10	9.95	0.10	21225
23114-AA	Sledge hammer, 12 lb.	02-Jan-14	8	5	14.40	0.05	
54778-2T	Ratchet tie, 1/8-in. fine	15-Dec-13	43	20	4.99	0.00	21344
88-VVRE-Q	Hicut chain saw, 16 in.	07-Feb-14	11	5	256.99	0.05	24288
PVC23DRT	PVC pipe, 3.5-in., 8-ft	20-Feb-14	189	75	5.87	0.00	
SM-18277	1.25-in. metal screw, 25	01-Mar-14	172	75	6.99	0.00	21225
SW-23116	2.5-in. wd. screw, 50	24-Feb-14	237	100	0.45	0.00	21231
VIR3/TT3	Steel railing, 48"x1.6", 5' mesh	17-Jan-14	18	5	119.95	0.10	25595

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Figure 1 - Ch07_SaleCo database

1. Write a query to count the number of invoices. (1 pts)
2. Write a query to count the number of customers with a balance of more than \$500. (2 pts)

3. Generate a listing of all purchases made by the customers, using the output shown in Figure P3 as your guide. (Hint: Use the ORDER BY clause to order the resulting rows shown in Figure P3.) (3 pts)

CUS_CODE	INV_NUMBER	INV_DATE	P_DESCRPT	LINE_UNITS	LINE_PRICE
10011	1002	16-Jan-14	Rat-tail file, 1/8-in. fine	2	4.99
10011	1004	17-Jan-14	Claw hammer	2	9.95
10011	1004	17-Jan-14	Rat-tail file, 1/8-in. fine	3	4.99
10011	1008	17-Jan-14	Claw hammer	1	9.95
10011	1008	17-Jan-14	PVC pipe, 3.5-in., 8-ft	5	5.87
10011	1008	17-Jan-14	Steel matting, 4'x8'x1/6", .5" mesh	3	119.95
10012	1003	16-Jan-14	7.25-in. pwr. saw blade	5	14.99
10012	1003	16-Jan-14	B&D cordless drill, 1/2-in.	1	38.95
10012	1003	16-Jan-14	Hrd. cloth, 1/4-in., 2x50	1	39.95
10014	1001	16-Jan-14	7.25-in. pwr. saw blade	1	14.99
10014	1001	16-Jan-14	Claw hammer	1	9.95
10014	1006	17-Jan-14	1.25-in. metal screw, 25	3	6.99
10014	1006	17-Jan-14	B&D jigsaw, 12-in. blade	1	109.92
10014	1006	17-Jan-14	Claw hammer	1	9.95
10014	1006	17-Jan-14	Hicut chain saw, 16 in.	1	256.99
10015	1007	17-Jan-14	7.25-in. pwr. saw blade	2	14.99
10015	1007	17-Jan-14	Rat-tail file, 1/8-in. fine	1	4.99
10018	1005	17-Jan-14	PVC pipe, 3.5-in., 8-ft	12	5.87

Figure P3 – List of Customer Purchases

4. Using the output shown in Figure P4 as your guide, generate a list of customer purchases, including the subtotals for each of the invoice line numbers. (Hint: Modify the query format used to produce the list of customer purchases in Problem 3, delete the INV_DATE column, and add the derived attribute LINE_UNITS * LINE_PRICE to calculate the subtotals.) (3 pts)

CUS_CODE	INV_NUMBER	P_DESCRPT	Units Bought	Unit Price	Subtotal
10011	1002	Rat-tail file, 1/8-in. fine	2	4.99	9.98
10011	1004	Claw hammer	2	9.95	19.90
10011	1004	Rat-tail file, 1/8-in. fine	3	4.99	14.97
10011	1008	Claw hammer	1	9.95	9.95
10011	1008	PVC pipe, 3.5-in., 8-ft	5	5.87	29.35
10011	1008	Steel matting, 4'x8'x1/6", .5" mesh	3	119.95	359.85
10012	1003	7.25-in. pwr. saw blade	5	14.99	74.95
10012	1003	B&D cordless drill, 1/2-in.	1	38.95	38.95
10012	1003	Hrd. cloth, 1/4-in., 2x50	1	39.95	39.95
10014	1001	7.25-in. pwr. saw blade	1	14.99	14.99
10014	1001	Claw hammer	1	9.95	9.95
10014	1006	1.25-in. metal screw, 25	3	6.99	20.97
10014	1006	B&D jigsaw, 12-in. blade	1	109.92	109.92
10014	1006	Claw hammer	1	9.95	9.95
10014	1006	Hicut chain saw, 16 in.	1	256.99	256.99
10015	1007	7.25-in. pwr. saw blade	2	14.99	29.98
10015	1007	Rat-tail file, 1/8-in. fine	1	4.99	4.99
10018	1005	PVC pipe, 3.5-in., 8-ft	12	5.87	70.44

Figure P4 – Summary of Customer Purchases with Subtotals

5. Modify the query used in Problem 4 to produce the summary shown in Figure P5. (2 pts)

CUS_CODE	CUS_BALANCE	Total Purchases
10011	0.00	444.00
10012	345.86	153.85
10014	0.00	422.77
10015	0.00	34.97
10018	216.55	70.44

Figure P5 – Customer Purchase Summary

6. Modify the query in Problem 5 to include the number of individual product purchases made by each customer. (In other words, if the customer's invoice is based on three products, one per LINE_NUMBER, you count three product purchases. Note that in the original invoice data, customer 10011 generated three invoices, which contained a total of six lines, each representing a product purchase.) Your output values must match those shown in Figure P6. (2 pts)

CUS_CODE	CUS_BALANCE	Total Purchases	Number of Purchases
10011	0.00	444.00	6
10012	345.86	153.85	3
10014	0.00	422.77	6
10015	0.00	34.97	2
10018	216.55	70.44	1

Figure P6 - Customer Total Purchase Amounts and Number of Purchases

7. Use a query to compute the average purchase amount per product made by each customer. (Hint: Use the results of Problem 6 as the basis for this query.) Your output values must match those shown in Figure P7. Note that the average purchase amount is equal to the total purchases divided by the number of purchases per customer. (2 pts)

CUS_CODE	CUS_BALANCE	Total Purchases	Number of Purchases	Average Purchase Amount
10011	0.00	444.00	6	74.00
10012	345.86	153.85	3	51.28
10014	0.00	422.77	6	70.46
10015	0.00	34.97	2	17.48
10018	216.55	70.44	1	70.44

Figure 7 - Average Purchase Amount by Customer

8. Create a query to produce the total purchase per invoice, generating the results shown in Figure P8. The invoice total is the sum of the product purchases in the LINE that corresponds to the INVOICE. (2 pts)

INV_NUMBER	Invoice Total
1001	24.94
1002	9.98
1003	153.85
1004	34.87
1005	70.44
1006	397.83
1007	34.97
1008	399.15

Figure P8 – Invoice Totals

9. Write a query to produce the number of invoices and the total purchase amounts by customer, using the output shown in Figure P9 as your guide. (3 pts)

CUS_CODE	Number of Invoices	Total Customer Purchases
10011	3	444.00
10012	1	153.85
10014	2	422.77
10015	1	34.97
10018	1	70.44

Figure P9 - Number of Invoices and Total Purchase Amounts by Customer

10. Create a query that summarizes the value of products currently in inventory. Note that the value of each product is a result of multiplying the units currently in inventory by the unit price. Use the ORDER BY clause to match the order shown in Figure P10. (3 pts)

P_DESCRIPTION	P_QOH	P_PRICE	Subtotal
Power painter, 15 psi., 3-nozzle	8	109.99	879.92
7.25-in. pwr. saw blade	32	14.99	479.68
9.00-in. pwr. saw blade	18	17.49	314.82
Hrd. cloth, 1/4-in., 2x50	15	39.95	599.25
Hrd. cloth, 1/2-in., 3x50	23	43.99	1011.77
B&D jigsaw, 12-in. blade	8	109.92	879.36
B&D jigsaw, 8-in. blade	6	99.87	599.22
B&D cordless drill, 1/2-in.	12	38.95	467.40
Claw hammer	23	9.95	228.85
Sledge hammer, 12 lb.	8	14.40	115.20
Rat-tail file, 1/8-in. fine	43	4.99	214.57
Hicut chain saw, 16 in.	11	256.99	2826.89
PVC pipe, 3.5-in., 8-ft	188	5.87	1103.56
1.25-in. metal screw, 25	172	6.99	1202.28
2.5-in. wd. screw, 50	237	8.45	2002.65
Steel matting, 4'x8'x1/6", .5" mesh	18	119.95	2159.10

Figure 10 - Value of Products Currently in Inventory

11. Using the results of the query created in Problem 10, find the total value of the product inventory. The results are shown in Figure P11. (2 pts)

Total Value of Inventory
15084.52

Figure P11 - Total Value of all Products in Inventory

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