

Module 5. Assignment 2: Creating a SaleCo Relational Database

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```
(base) C:\Users\asidd>
```

```
(base) C:\Users\asidd>CD Desktop\MSDS\420 Database Systems\Lecture 5\Exercise 3 Files Version b\Exercise 3 Files  
Version b
```

```
(base) C:\Users\asidd\Desktop\MSDS\420 Database Systems\Lecture 5\Exercise 3 Files Version b\Exercise 3 Files Version  
b>dir
```

```
Volume in drive C is OS
```

```
Volume Serial Number is 32DD-F0F8
```

```
Directory of C:\Users\asidd\Desktop\MSDS\420 Database Systems\Lecture 5\Exercise 3 Files Version b\Exercise 3  
Files Version b
```

```
07/25/2019  02:43 AM    <DIR>          .  
07/25/2019  02:43 AM    <DIR>          ..  
07/23/2019  08:13 PM             6,148 .DS_Store  
07/24/2019  11:29 PM    <DIR>          .ipynb_checkpoints  
07/23/2019  10:49 PM             8,486 Build-DB-SaleCo.sql  
07/23/2019  10:50 PM             6,166 LoadRowsIntoDB.sql  
07/25/2019  01:48 AM             73,728 SaleCo  
07/25/2019  02:39 AM          467,560 Siddikov_Exercise_1.ipynb  
07/25/2019  02:40 AM          332,261 Siddikov_Exercise_1.pdf  
07/23/2019  08:13 PM          740,352 sqlite3.exe  
07/25/2019  01:16 AM          8,131,584 xyz.db  
07/23/2019  08:13 PM          2,018,041 xyzcust10.csv  
07/25/2019  01:16 AM          2,826,422 xyzcust10.p  
  
          10 File(s)          14,610,748 bytes  
  
          3 Dir(s)   102,088,179,712 bytes free
```

```
(base) C:\Users\asidd\Desktop\MSDS\420 Database Systems\Lecture 5\Exercise 3 Files Version b\Exercise 3 Files Version
b>Sqlite3.exe
```

```
SQLite version 3.21.0 2017-10-24 18:55:49
```

```
Enter ".help" for usage hints.
```

```
Connected to a transient in-memory database.
```

```
Use ".open FILENAME" to reopen on a persistent database.
```

```
sqlite> .open SaleCo
```

```
sqlite> .header on
```

```
sqlite> .mode column
```

```
sqlite> .tables
```

| CUSTOMER | INVOICE | LINE | P | PRODUCT | V | VENDOR |
|----------|---------|------|---|---------|---|--------|
|----------|---------|------|---|---------|---|--------|

```
sqlite> select * from invoice;
```

| INV_NUMBER | CUS_CODE | INV_DATE |
|------------|----------|-------------|
| ----- | ----- | ----- |
| 1001 | 10014 | 16-JAN-2016 |
| 1002 | 10011 | 16-JAN-2016 |
| 1003 | 10012 | 16-JAN-2016 |
| 1004 | 10011 | 17-JAN-2016 |
| 1005 | 10018 | 17-JAN-2016 |
| 1006 | 10014 | 17-JAN-2016 |
| 1007 | 10015 | 17-JAN-2016 |
| 1008 | 10011 | 17-JAN-2016 |

1. ## Write a query to count the number of invoices.

```
SELECT COUNT (INV_NUMBER)
FROM INVOICE;
```

Or

```
SELECT COUNT (*)
FROM INVOICE;
COUNT (INV_NUMBER)
```

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2. ## Write a query to count the number of customers with a customer balance over \$500.

```
SELECT COUNT (CUS_CODE)
FROM CUSTOMER
WHERE CUS_BALANCE > 500;
COUNT (CUS_CODE)
```

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3. ## Generate a listing of all purchases made by customers; sort output by the customer code and invoice number.

```
SELECT INV.CUS_CODE, INV.INV_NUMBER, INV.INV_DATE, LN.LINE_UNITS, LN.LINE_PRICE
FROM INVOICE INV
INNER JOIN LINE LN
ON INV.INV_NUMBER = LN.INV_NUMBER
ORDER BY INV.CUS_CODE, INV.INV_NUMBER;
```

Or

```
SELECT INV.CUS_CODE, INV.INV_NUMBER, INV.INV_DATE, LN.LINE_UNITS, LN.LINE_PRICE
FROM INVOICE INV, LINE LN
WHERE INV.INV_NUMBER = LN.INV_NUMBER
ORDER BY INV.CUS_CODE, INV.INV_NUMBER;
```

| CUS_CODE | INV_NUMBER | INV_DATE | LINE_UNITS | LINE_PRICE |
|----------|------------|-------------|------------|------------|
| ----- | ----- | ----- | ----- | ----- |
| 10011 | 1002 | 16-JAN-2016 | 2 | 4.99 |
| 10011 | 1004 | 17-JAN-2016 | 3 | 4.99 |
| 10011 | 1004 | 17-JAN-2016 | 2 | 9.95 |

| | | | | |
|-------|------|-------------|----|--------|
| 10011 | 1008 | 17-JAN-2016 | 5 | 5.87 |
| 10011 | 1008 | 17-JAN-2016 | 3 | 119.95 |
| 10011 | 1008 | 17-JAN-2016 | 1 | 9.95 |
| 10012 | 1003 | 16-JAN-2016 | 1 | 38.95 |
| 10012 | 1003 | 16-JAN-2016 | 1 | 39.95 |
| 10012 | 1003 | 16-JAN-2016 | 5 | 14.99 |
| 10014 | 1001 | 16-JAN-2016 | 1 | 14.99 |
| 10014 | 1001 | 16-JAN-2016 | 1 | 9.95 |
| 10014 | 1006 | 17-JAN-2016 | 3 | 6.99 |
| 10014 | 1006 | 17-JAN-2016 | 1 | 109.92 |
| 10014 | 1006 | 17-JAN-2016 | 1 | 9.95 |
| 10014 | 1006 | 17-JAN-2016 | 1 | 256.99 |
| 10015 | 1007 | 17-JAN-2016 | 2 | 14.99 |
| 10015 | 1007 | 17-JAN-2016 | 1 | 4.99 |
| 10018 | 1005 | 17-JAN-2016 | 12 | 5.87 |

4. ## Generate a listing of customer purchases, including the subtotals for each of the invoice line numbers; sort output by customer code, invoice number and the line_number.

```

SELECT INV.CUS_CODE, CUS.CUS_LNAME, INV.INV_NUMBER, LN.LINE_NUMBER, PRD.P_DESCRIPTOR, LN.LINE_UNITS, LN.LINE_PRICE,
LN.LINE_UNITS * LN.LINE_PRICE AS SUB_TOTALS
FROM INVOICE INV
INNER JOIN LINE LN
ON INV.INV_NUMBER = LN.INV_NUMBER
INNER JOIN PRODUCT PRD
ON PRD.P_CODE = LN.P_CODE
INNER JOIN CUSTOMER CUS
ON CUS.CUS_CODE = INV.CUS_CODE
ORDER BY INV.CUS_CODE, INV.INV_NUMBER, LN.LINE_NUMBER;

```

Or

```
SELECT INV.CUS_CODE, CUS.CUS_LNAME, INV.INV_NUMBER, LN.LINE_NUMBER, PRD.P_DESCRIPTOR, LN.LINE_UNITS, LN.LINE_PRICE,
LN.LINE_UNITS * LN.LINE_PRICE AS SUB_TOTALS
FROM INVOICE INV, LINE LN, PRODUCT PRD, CUSTOMER CUS
WHERE INV.INV_NUMBER = LN.INV_NUMBER
AND PRD.P_CODE = LN.P_CODE
AND CUS.CUS_CODE = INV.CUS_CODE
ORDER BY INV.CUS_CODE, INV.INV_NUMBER, LN.LINE_NUMBER;
```

| CUS_CODE | CUS_LNAME | INV_NUMBER | LINE_NUMBER | P_DESCRIPTOR | LINE_UNITS | LINE_PRICE | SUB_TOTALS |
|----------|-----------|------------|-------------|-----------------------------|------------|------------|------------|
| ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| 10011 | Dunne | 1002 | 1 | Rat-tail file, 1/8-in. fine | 2 | 4.99 | 9.98 |
| 10011 | Dunne | 1004 | 1 | Rat-tail file, 1/8-in. fine | 3 | 4.99 | 14.97 |
| 10011 | Dunne | 1004 | 2 | Claw hammer | 2 | 9.95 | 19.9 |
| 10011 | Dunne | 1008 | 1 | PVC pipe, 3.5-in., 8-ft | 5 | 5.87 | 29.35 |
| 10011 | Dunne | 1008 | 2 | Steel matting, 4'x8'x1/6", | 3 | 119.95 | 359.85 |
| 10011 | Dunne | 1008 | 3 | Claw hammer | 1 | 9.95 | 9.95 |
| 10012 | Smith | 1003 | 1 | B&D cordless drill, 1/2-in. | 1 | 38.95 | 38.95 |
| 10012 | Smith | 1003 | 2 | Hrd. cloth, 1/4-in., 2x50 | 1 | 39.95 | 39.95 |
| 10012 | Smith | 1003 | 3 | 7.25-in. pwr. saw blade | 5 | 14.99 | 74.95 |
| 10014 | Orlando | 1001 | 1 | 7.25-in. pwr. saw blade | 1 | 14.99 | 14.99 |
| 10014 | Orlando | 1001 | 2 | Claw hammer | 1 | 9.95 | 9.95 |
| 10014 | Orlando | 1006 | 1 | 1.25-in. metal screw, 25 | 3 | 6.99 | 20.97 |
| 10014 | Orlando | 1006 | 2 | B&D jigsaw, 12-in. blade | 1 | 109.92 | 109.92 |
| 10014 | Orlando | 1006 | 3 | Claw hammer | 1 | 9.95 | 9.95 |
| 10014 | Orlando | 1006 | 4 | Hicut chain saw, 16 in. | 1 | 256.99 | 256.99 |
| 10015 | O'Brian | 1007 | 1 | 7.25-in. pwr. saw blade | 2 | 14.99 | 29.98 |
| 10015 | O'Brian | 1007 | 2 | Rat-tail file, 1/8-in. fine | 1 | 4.99 | 4.99 |
| 10018 | Farriss | 1005 | 1 | PVC pipe, 3.5-in., 8-ft | 12 | 5.87 | 70.44 |

5. ## List the balance characteristics of the customers who have made purchases during the current invoice cycle—that is, for the customers who appear in the INVOICE table; sort by customer code.

```
SELECT DISTINCT INV.CUS_CODE, CUS.CUS_FNAME, CUS.CUS_LNAME, CUS.CUS_BALANCE
FROM CUSTOMER CUS, INVOICE INV
WHERE CUS.CUS_CODE = INV.CUS_CODE
ORDER BY INV.CUS_CODE;
```

Or

```
SELECT DISTINCT CUS.CUS_CODE, CUS.CUS_FNAME, CUS.CUS_LNAME, CUS.CUS_BALANCE
FROM CUSTOMER CUS
WHERE CUS.CUS_CODE
IN (SELECT DISTINCT INV.CUS_CODE FROM INVOICE INV)
ORDER BY CUS.CUS_CODE;
```

| CUS_CODE | CUS_FNAME | CUS_LNAME | CUS_BALANCE |
|----------|-----------|-----------|-------------|
| ----- | ----- | ----- | ----- |
| 10011 | Leona | Dunne | 0 |
| 10012 | Kathy | Smith | 345.86 |
| 10014 | Myron | Orlando | 0 |
| 10015 | Amy | O'Brian | 0 |
| 10018 | Anne | Farriss | 216.55 |

6. ## Find a listing of customers who did not make purchases during the invoicing period; sort by customer code.

```
SELECT DISTINCT CUS.CUS_CODE, CUS.CUS_FNAME, CUS.CUS_LNAME, CUS.CUS_BALANCE
FROM CUSTOMER CUS
WHERE CUS.CUS_CODE
NOT IN (SELECT DISTINCT INV.CUS_CODE FROM INVOICE INV)
ORDER BY CUS.CUS_CODE;
```

| CUS_CODE | CUS_FNAME | CUS_LNAME | CUS_BALANCE |
|----------|-----------|-----------|-------------|
| ----- | ----- | ----- | ----- |
| 10010 | Alfred | Ramas | 0 |
| 10013 | Paul | Olowski | 536.75 |
| 10016 | James | Brown | 221.19 |
| 10017 | George | Williams | 768.93 |
| 10019 | Olette | Smith | 0 |

7. ## Create a query to produce a summary of the value of products currently in inventory.

```
SELECT P_DESCRPT, P_QOH, P_PRICE, P_QOH * P_PRICE AS SUBTOTAL
FROM PRODUCT;
```

| P_DESCRPT | 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 | 467.4 |
| Claw hammer | 23 | 9.95 | 228.85 |
| Sledge hammer, 12 lb. | 8 | 14.4 | 115.2 |
| 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" m | 18 | 119.95 | 2159.1 |

```
SELECT SUM(P_QOH*P_PRICE) as TOTAL_INVENTORY_VALUE
FROM PRODUCT;
```

| TOTAL_INVENTORY_VALUE |
|-----------------------|
| ----- |
| 15084.52 |