Lab 2: Querying the Database with SELECT

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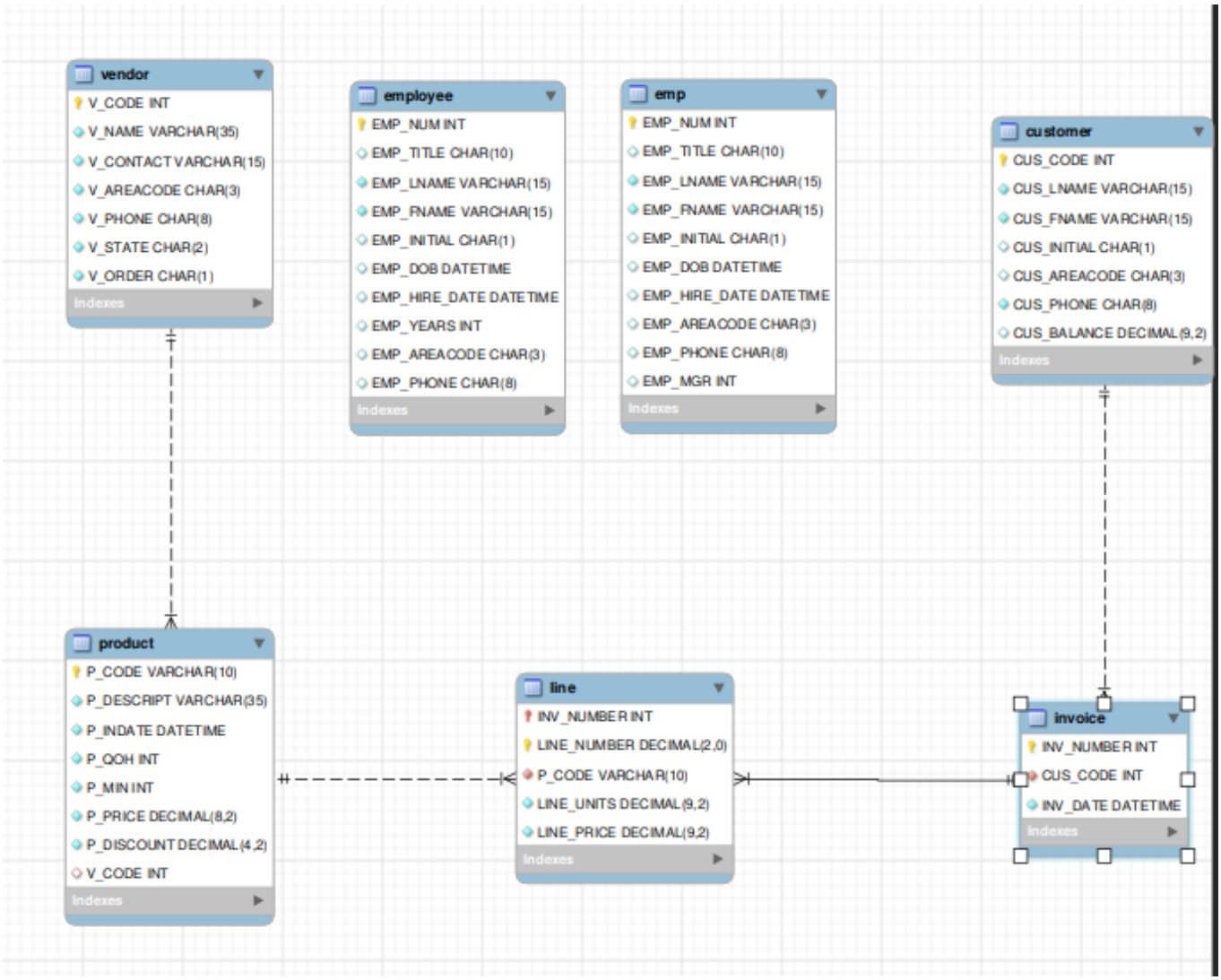
01. ERD Screenshot

Requirement: Submit a screenshot that shows the ERD for the database.

01_SaleCo_ERD.jpg



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02. Scenario 2: Select Specific Columns

Requirement: From the vendor table, retrieve all rows, but only the vendor name, areacode, phone, and state.

02_Scenario_2.jpg

```
-- Q2

SELECT V_NAME, V_AREACODE, V_PHONE, V_STATE FROM vendor;

+-----------------+------------+----------+---------+
| V_NAME          | V_AREACODE | V_PHONE  | V_STATE |
+-----------------+------------+----------+---------+
| Bryson, Inc.    | 615        | 223-3234 | TN      |
| SuperLoo, Inc.  | 904        | 215-8995 | FL      |
| D&E Supply      | 615        | 228-3245 | TN      |
| Gomez Bros.     | 615        | 889-2546 | KY      |
| Dome Supply     | 901        | 678-1419 | GA      |
| Randsets Ltd.   | 901        | 678-3998 | GA      |
| Brackman Bros.  | 615        | 228-1410 | TN      |
| ORDVA, Inc.     | 615        | 898-1234 | TN      |
| B&K, Inc.       | 904        | 227-0093 | FL      |
| Damal Supplies  | 615        | 890-3529 | TN      |
| Rubicon Systems | 904        | 456-0092 | FL      |
+-----------------+------------+----------+---------+
```

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03. Scenario 3: Derived Values (Concat)

Requirement: For all customers, provide their name in the format "LastName, FirstName" and their full phone number (area code and phone number with a space in between).

03_Scenario_3.jpg

```
-- Q3

SELECT
  CONCAT(CUS_LNAME, ', ', CUS_FNAME) as full_name,
  CONCAT(CUS_AREACODE, ' ', CUS_PHONE) as phone_number
  FROM customer;
```

```
+------------------+--------------+
| full_name        | phone_number |
+------------------+--------------+
| Ramas, Alfred    | 615 844-2573 |
| Dunne, Leona     | 713 894-1238 |
| Smith, Kathy     | 615 894-2285 |
| Olowski, Paul    | 615 894-2180 |
| Orlando, Myron   | 615 222-1672 |
| O'Brian, Amy     | 713 442-3381 |
| Brown, James     | 615 297-1228 |
| Williams, George | 615 290-2556 |
| Farriss, Anne    | 713 382-7185 |
| Smith, Olette    | 615 297-3809 |
+------------------+--------------+
```

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04. Scenario 4: Ordering Rows

Requirement: Write a SQL query to show all the products (product code, description and price) ordered with the most expensive on the top.

04_Scenario_4.jpg

```
22 SELECT P_CODE, P_DESCRIPT, P_PRICE FROM product ORDER BY P_PRICE DESC;
```

P_CODE	P_DESCRIPT	P_PRICE
89-WRE-Q	Hicut chain saw, 16 in.	256.99
WR3/TT3	Steel matting, 4'x8'x1/6", .5" mesh	119.95
11QER/31	Power painter, 15 psi., 3-nozzle	109.99
2232/QTY	B&D jigsaw, 12-in. blade	109.92
2232/QWE	B&D jigsaw, 8-in. blade	99.87
1558-QW1	Hrd. cloth, 1/2-in., 3x50	43.99
1546-QQ2	Hrd. cloth, 1/4-in., 2x50	39.95
2238/QPD	B&D cordless drill, 1/2-in.	38.95
14-Q1/L3	9.00-in. pwr. saw blade	17.49
13-Q2/P2	7.25-in. pwr. saw blade	14.99
23114-AA	Sledge hammer, 12 lb.	14.40
23109-HB	Claw hammer	9.95
SW-23116	2.5-in. wd. screw, 50	8.45
SM-18277	1.25-in. metal screw, 25	6.99
PVC23DRT	PVC pipe, 3.5-in., 8-ft	5.87
54778-2T	Rat-tail file, 1/8-in. fine	4.99

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05. Scenario 5: Multi-Column Sorting

Requirement: Write a SQL query that sorts employees by first, middle and last names (in that order).

05_Scenario_5.jpg

```
-- Q5

SELECT EMP_FNAME, EMP_INITIAL, EMP_LNAME FROM employee ORDER BY EMP_FNAME, EMP_INITIAL, EMP_LNAME
```

EMP_FNAME	EMP_INITIAL	EMP_LNAME
Anne	M	Jones
Edward	E	Johnson
George	A	Smith
George	D	Kolmycz
George	K	Smith
Hermine	R	Saranda
Jeanine	K	Smith
John	P	Lange
Jorge	D	Diante
Leighla	W	Genkazi
Marie	G	Brandon
Melanie	P	Smythe
Paul	R	Wiesenbach
Rhett	NULL	Vandam
Rhonda	G	Lewis
Robert	D	Williams
Rupert	E	Washington

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06. Scenario 6: Top Rows (Limit)

Requirement: Create a query to list the 3 most expensive products.

06_Scenario_6.jpg

```
SELECT P_CODE, P_DESCRIPT, P_PRICE FROM product ORDER BY P_PRICE DESC LIMIT 3;
```

P_CODE	P_DESCRIPT	P_PRICE
89-WRE-Q	Hicut chain saw, 16 in.	256.99
WR3/TT3	Steel matting, 4'x8'x1/6", .5" mesh	119.95
11QER/31	Power painter, 15 psi., 3-nozzle	109.99

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07. Scenario 7A: Pattern Matching (LIKE)

Requirement: Create a query which displays all the p_code, p_decsript, p_price, p_discount and v_code where the description contains the word “saw”.

07_Scenario_7A.jpg

```
-- Q7A

SELECT P_CODE, P_DESCRIPT, P_PRICE, P_DISCOUNT, V_CODE FROM product WHERE P_DESCRIPT like '%saw%';
```

```
+----------+--------------------------+---------+------------+---------+
| P_CODE   | P_DESCRIPT               | P_PRICE | P_DISCOUNT | V_CODE |
+----------+--------------------------+---------+------------+---------+
| 13-Q2/P2 | 7.25-in. pwr. saw blade  |   14.99 |       0.05 |  21344 |
| 14-Q1/L3 | 9.00-in. pwr. saw blade  |   17.49 |       0.00 |  21344 |
| 2232/QTY | B&D jigsaw, 12-in. blade |  109.92 |       0.05 |  24288 |
| 2232/QWE | B&D jigsaw, 8-in. blade  |   99.87 |       0.05 |  24288 |
| 89-WRE-Q | Hicut chain saw, 16 in.  |  256.99 |       0.05 |  24288 |
+----------+--------------------------+---------+------------+---------+
```

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08. Scenario 7B: Pattern Matching + NULL Check

Requirement: Create a query for all the 'hammer' products and make sure we have a vendor this time.

08_Scenario_7B.jpg

```
-- Q7B

SELECT P_CODE, P_DESCRIPT, P_PRICE, P_DISCOUNT, V_CODE
  FROM product
  WHERE P_DESCRIPT
  like '%hammer%' AND V_CODE IS NOT NULL;
```

```
+----------+-------------+---------+------------+---------+
| P_CODE   | P_DESCRIPT  | P_PRICE | P_DISCOUNT | V_CODE |
+----------+-------------+---------+------------+---------+
| 23109-HB | Claw hammer |    9.95 |       0.10 |  21225 |
+----------+-------------+---------+------------+---------+
```

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09. Scenario 7C: IN Operator

Requirement: Create a query to show all employees with a title in 'Ms.', 'Mrs.'.

09_Scenario_7C.jpg

```
-- Q7C

SELECT EMP_TITLE, EMP_LNAME, EMP_FNAME
  FROM employee
  WHERE EMP_TITLE = 'Ms.' OR EMP_TITLE = 'Mrs.';
```

```
+-----------+-----------+-----------+
| EMP_TITLE | EMP_LNAME | EMP_FNAME |
+-----------+-----------+-----------+
| Ms.       | Lewis     | Rhonda    |
| Ms.       | Jones     | Anne      |
| Mrs.      | Smith     | Jeanine   |
| Mrs.      | Genkazi   | Leighla   |
| Ms.       | Smythe    | Melanie   |
| Ms.       | Brandon   | Marie     |
| Mrs.      | Saranda   | Hermine   |
+-----------+-----------+-----------+
```

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10. Scenario 7D: Range Check (BETWEEN)

Requirement: Can you find all products which have a price between $20 and $50?

10_Scenario_7D.jpg

```
-- Q7D
SELECT
  P_CODE, P_DESCRIPT, P_PRICE, V_CODE
  FROM product
  WHERE product.P_PRICE BETWEEN 20 AND 50;
```

```
+----------+------------------------------+---------+--------+
| P_CODE   | P_DESCRIPT                   | P_PRICE | V_CODE |
+----------+------------------------------+---------+--------+
| 1546-QQ2 | Hrd. cloth, 1/4-in., 2x50    |   39.95 |  23119 |
| 1558-QW1 | Hrd. cloth, 1/2-in., 3x50    |   43.99 |  23119 |
| 2238/QPD | B&D cordless drill, 1/2-in.  |   38.95 |  25595 |
+----------+------------------------------+---------+--------+
```

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11. Scenario 8A: Aggregates (MIN/MAX)

Requirement: Show the first and last customer code from the customer table.

11_Scenario_8A.jpg

```
-- Q8A

SELECT
  MIN(CUS_CODE) as 'First Customer COde',
  MAX(CUS_CODE) as 'Last Customer Code'
  FROM customer;
```

```
+----------------------+--------------------+
| First Customer COde | Last Customer Code |
+----------------------+--------------------+
|               10010 |              10019 |
+----------------------+--------------------+
```

---

12. Scenario 8B: Aggregates (COUNT)

Requirement: Show the number of products that have vendors.

12_Scenario_8B.jpg

```
-- Q8B

SELECT COUNT(*) FROM product WHERE V_CODE IS NOT NULL;
```

```
+----------+
| COUNT(*) |
+----------+
|       14 |
+----------+
```

---

13. Scenario 9A: Group By

Requirement: Can you count the number of customers in each areacode?

13_Scenario_9A.jpg

```
-- Q8C

SELECT CUS_AREACODE, count(*) as 'Count by Area code'
  FROM customer
  GROUP BY CUS_AREACODE;
```

```
+--------------+--------------------+
| CUS_AREACODE | Count by Area code |
+--------------+--------------------+
| 615          |                  7 |
| 713          |                  3 |
+--------------+--------------------+
```

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14. Scenario 9B: Group By (Titles)

Requirement: Provide me a count of each Mr., Ms. and Mrs from the employee table.

14_Scenario_9B.jpg

```
-- Q9B

SELECT EMP_TITLE, COUNT(*)
  FROM employee
  WHERE EMP_TITLE = 'Mr.'
  OR EMP_TITLE = 'Ms.'
  OR EMP_TITLE = 'Mrs.'
  GROUP BY EMP_TITLE
```

```
+-----------+----------+
| EMP_TITLE | COUNT(*) |
+-----------+----------+
| Mr.       |       10 |
| Ms.       |        4 |
| Mrs.      |        3 |
+-----------+----------+
```

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15. Scenario 10: Having Clause

Requirement: Find the most expensive invoices (invoices over $100).

15_Scenario_10.jpg

```sql
SELECT
  INV_NUMBER,
  SUM(LINE_PRICE * LINE_UNITS) as total_price
  FROM line
  GROUP BY INV_NUMBER
  HAVING total_price > 100;
```

```
+------------+-------------+
| INV_NUMBER | total_price |
+------------+-------------+
|       1003 |    153.8500 |
|       1006 |    397.8300 |
|       1008 |    399.1500 |
+------------+-------------+
```