

SIT103 – DATABASE FUNDAMENTALS

SELECT QUERIES WITH JOIN 6.1P

1. Write a SQL statement to list invoices with their INV_NUMBER, INV_DATE along with the CUS_FNAME and CUS_LNAME of the customers they belong to.

The screenshot shows the MySQL Workbench interface. In the top-left pane, the Navigator and Instance sections are visible. The main area contains a SQL editor window titled "SQL File 3" with the following code:

```
1 * create database sit103;
2 * show tables;
3 * show databases;
4 * select INV.INV_NUMBER , INV.INV_DATE , CUS.CUS_FNAME , CUS.CUS_LNAME FROM IN
JOIN CUSTOMER CUS ON INV.CUS_CODE = CUS.CUS_CODE;
```

Below the SQL editor is a Result Grid showing the query results:

INV_NUMBER	INV_DATE	CUS_FNAME	CUS_LNAME
1001	2018-01-16 00:00:00	Myron	Orlando
1002	2018-01-16 00:00:00	Leona	Dunne
1003	2018-01-16 00:00:00	Kathy	Smith
1004	2018-01-17 00:00:00	Leona	Dunne
1005	2018-01-17 00:00:00	Anne	Farris
1006	2018-01-17 00:00:00	Myron	Orlando
1007	2018-01-17 00:00:00	Amy	O'Brian
1008	2018-01-17 00:00:00	Leona	Dunne

At the bottom of the interface, the system tray shows the date and time as 25-08-2024 02:20.

2. Write a SQL statement to list V_CODE and V_NAME along with the number of products they supply (column name as 'NUM_PRODS') and the average price of product they supply (column name as 'AVG_PROD_PRICE').

The screenshot shows the MySQL Workbench interface. In the top-left pane, the Navigator and Instance sections are visible. The main area contains a SQL editor window titled "SQL File 3" with the following code:

```
1 * create database sit103;
2 * show tables;
3 * show databases;
4 * select INV.INV_NUMBER , INV.INV_DATE , CUS.CUS_FNAME , CUS.CUS_LNAME FROM INVOICE INV
JOIN CUSTOMER CUS ON INV.CUS_CODE = CUS.CUS_CODE;
5 * SELECT V.V_CODE , V.V_NAME , COUNT(P.P_CODE) AS NUM_PRODS , AVG(P.P_PRICE) AS AVG_PROD_PRICE
FROM VENDOR V JOIN PRODUCT P ON V.V_CODE = P.V_CODE GROUP BY V.V_CODE , V.V_NAME ORDER BY V_CODE ASC;
```

Below the SQL editor is a Result Grid showing the query results:

V_CODE	V_NAME	NUM_PRODS	AVG_PROD_PRICE
21225	Bryson, Inc.	2	8.470000
21231	D&E Supply	1	8.450000
21344	Gomes Bros.	3	12.490000
23119	Randets Ltd.	2	41.970000
24288	ORDVA, Inc.	3	155.593333
25995	Rubicon Systems	3	89.630000

At the bottom of the interface, the system tray shows the date and time as 25-08-2024 02:23.

3. Write a SQL statement to list P_CODE and P_DESCRIP of all products along with their vendors' V_CODE and V_NAME if available. Note that your results must include all products regardless of whether vendor information is available or not. For products where vendor information is not available, V_CODE and V_NAME columns will be empty or NULL in the result (Hint: use outer join).

```

MySQL Workbench - Local instance MySQL80
File Edit View Query Database Server Tools Scripting Help
Navigator: MANAGEMENT INSTANCE PERFORMANCE Administration Schemas Information Object Info Session
SQL File 3 | Query 1 Task6_1P-Sales*
3 • show databases;
4 • select INV.INV_NUMBER , INV.INV_DATE , CUS.CUS_FNAME , CUS.CUS_LNAME FROM INVOICE INV
JOIN CUSTOMER CUS ON INV.CUS_CODE = CUS.CUS_CODE
5 • SELECT V.V_CODE, V.V_NAME, COUNT(P.P_CODE) AS NUM_PRODS, AVG(P.P_PRICE) AS AVG_PROD_PRICE
FROM VENDOR V JOIN PRODUCT P ON V.V_CODE = P.V_CODE GROUP BY V.V_CODE, V.V_NAME ORDER BY V_CODE ASC;
6 • SELECT P.P_CODE, P.P_DESCRIP, V.V_CODE, V.V_NAME
FROM PRODUCT P LEFT JOIN VENDOR V ON P.V_CODE = V.V_CODE;
7
8
9
9 FROM PRODUCT P LEFT JOIN VENDOR V ON P.V_CODE = V.V_CODE;

```

Result Grid | Filter Rows: Export: Wrap Cell Content: Result Grid Form Editor Field Types

P_CODE	P_DESCRIP	V_CODE	V_NAME
11QERJ31	Power painter, 15 psi., 3-nozzle	25595	Rubicon Systems
13-Q2P2	7.25-in. pnr. saw blade	21344	Gomez Bros.
14-QUL3	9.00-in. pnr. saw blade	21344	Gomez Bros.
1546-QQ2	Hrd. cloth, 1/4-in., 2x50	23119	Randests Ltd.
1558-QW1	Hrd. cloth, 1/2-in., 3x50	23119	Randests Ltd.
2232-QTY	B&G jigsaw, 12-in. blade	24288	ORDVA, Inc.
2232-QWE	B&G jigsaw, 8-in. blade	24288	ORDVA, Inc.
2238-QPD	B&G cordless drill, 1/2-in.	25595	Rubicon Systems
23109-HB	Clew hammer	21225	Bryson, Inc.
23114-AA	Sledge hammer, 12 lb.	21344	Gomez Bros.
54778-ZT	Rat-tail file, 1/8-in. fine	21344	Gomez Bros.
89-WRE-Q	Hot chain saw, 16 in.	24288	ORDVA, Inc.

Action Output

#	Time	Action	Message	Duration / Fetch
136	02-21-52	SELECT V.V_CODE, V.V_NAME, COUNT(P.P_CODE) AS NUM_PRODS, AVG(P.P_PRICE) AS AVG_PROD_PRICE	Error Code: 1630. FUNCTION at103.COUNT does not exist. Check the Function Name Parsing and Resolution.	0.000 sec
137	02-22-49	SELECT V.V_CODE, V.V_NAME, COUNT(P.P_CODE) AS NUM_PRODS, AVG(P.P_PRICE) AS AVG_PROD_PRICE	Error Code: 1630. FUNCTION at103.COUNT does not exist. Check the Function Name Parsing and Resolution.	0.000 sec
138	02-22-51	create database at103	Error Code: 1007. Can't create database 'at103'; database exists	0.000 sec
139	02-22-53	SELECT V.V_CODE, V.V_NAME, COUNT(P.P_CODE) AS NUM_PRODS, AVG(P.P_PRICE) AS AVG_PROD_PRICE	Error Code: 1630. FUNCTION at103.COUNT does not exist. Check the Function Name Parsing and Resolution.	0.000 sec
140	02-23-16	SELECT V.V_CODE, V.V_NAME, COUNT(P.P_CODE) AS NUM_PRODS, AVG(P.P_PRICE) AS AVG_PROD_PRICE	6 row(s) returned	0.000 sec / 0.000 sec
141	02-24-40	SELECT P.P_CODE, P.P_DESCRIP, V.V_CODE, V.V_NAME FROM PRODUCT P LEFT JOIN VENDOR V ...	16 row(s) returned	0.000 sec / 0.000 sec
142	02-26-02	SELECT INV.INV_DATE, P.P_CODE, P.P_DESCRIP FROM INVOICE INV JOIN LINE LN ON INV.INV_NUMBER = LN.INV_NUMBER JOIN PRODUCT P ON LN.P_CODE = P.P_CODE WHERE INV.INV_NUMBER = 1008;	3 row(s) returned	0.000 sec / 0.000 sec

4. Write a SQL statement to retrieve INV_DATE and the list of products with P_CODE and P_DESCRIP of the invoice with INV_NUMBER = 1008 (Hint: you may have to join three tables)

```

MySQL Workbench - Local instance MySQL80
File Edit View Query Database Server Tools Scripting Help
Navigator: MANAGEMENT INSTANCE PERFORMANCE Administration Schemas Information Object Info Session
SQL File 3 | Query 1 Task6_1P-Sales*
5 JOIN CUSTOMER CUS ON INV.CUS_CODE = CUS.CUS_CODE
6 • SELECT V.V_CODE, V.V_NAME, COUNT(P.P_CODE) AS NUM_PRODS, AVG(P.P_PRICE) AS AVG_PROD_PRICE
7 FROM VENDOR V JOIN PRODUCT P ON V.V_CODE = P.V_CODE GROUP BY V.V_CODE, V.V_NAME ORDER BY V_CODE ASC;
8 • SELECT P.P_CODE, P.P_DESCRIP, V.V_CODE, V.V_NAME
FROM PRODUCT P LEFT JOIN VENDOR V ON P.V_CODE = V.V_CODE;
9
10 • SELECT INV.INV_DATE, P.P_CODE, P.P_DESCRIP FROM INVOICE INV JOIN LINE LN ON INV.INV_NUMBER = LN.INV_NUMBER JOIN PRODUCT P ON LN.P_CODE = P.P_CODE WHERE INV.INV_NUMBER = 1008;
11

```

Result Grid | Filter Rows: Export: Wrap Cell Content: Result Grid Form Editor Field Types

INV_DATE	P_CODE	P_DESCRIP
2018-01-17 00:00:00	PVC230RT	PVC pipe, 3.5-in., 8-ft
2018-01-17 00:00:00	WR3/T3	Steel matting, 4x8x1/8", .5" mesh
2018-01-17 00:00:00	23109-HB	Clew hammer

Action Output

#	Time	Action	Message	Duration / Fetch
137	02-22-49	SELECT V.V_CODE, V.V_NAME, COUNT(P.P_CODE) AS NUM_PRODS, AVG(P.P_PRICE) AS AVG_PROD_PRICE	Error Code: 1630. FUNCTION at103.COUNT does not exist. Check the Function Name Parsing and Resolution.	0.000 sec
138	02-22-51	create database at103	Error Code: 1007. Can't create database 'at103'; database exists	0.000 sec
139	02-22-53	SELECT V.V_CODE, V.V_NAME, COUNT(P.P_CODE) AS NUM_PRODS, AVG(P.P_PRICE) AS AVG_PROD_PRICE	Error Code: 1630. FUNCTION at103.COUNT does not exist. Check the Function Name Parsing and Resolution.	0.000 sec
140	02-23-16	SELECT V.V_CODE, V.V_NAME, COUNT(P.P_CODE) AS NUM_PRODS, AVG(P.P_PRICE) AS AVG_PROD_PRICE	6 row(s) returned	0.000 sec / 0.000 sec
141	02-24-40	SELECT P.P_CODE, P.P_DESCRIP, V.V_CODE, V.V_NAME FROM PRODUCT P LEFT JOIN VENDOR V ...	16 row(s) returned	0.000 sec / 0.000 sec
142	02-26-02	SELECT INV.INV_DATE, P.P_CODE, P.P_DESCRIP FROM INVOICE INV JOIN LINE LN ON INV.INV_NUMBER = LN.INV_NUMBER JOIN PRODUCT P ON LN.P_CODE = P.P_CODE WHERE INV.INV_NUMBER = 1008;	3 row(s) returned	0.000 sec / 0.000 sec

5. Write a SQL statement to list full names (by concatenating EMP_FNAME and EMP_LNAME separated by a space) of employees AS 'Employee' with their managers' full name (again by concatenating EMP_FNAME and EMP_LNAME separated by a space) AS 'Manager' (Hint: recursive/self join and string concatenation)

```

SELECT P_P_CODE, P_P_DESCRIFT, V_V_CODE, V_V_NAME
FROM PRODUCT P LEFT JOIN VENDOR V ON P_V_CODE = V_V_CODE;
SELECT INV_IN_DATE, P_P_CODE, P_P_DESCRIFT FROM INVOICE INV JOIN LINE LN
ON INV_INV_NUMBER = LN_INV_NUMBER JOIN PRODUCT P ON LN_P_CODE = P_P_CODE WHERE INV_INV_NUMBER = 1000;
SELECT CONCAT(E1.EMP_FNAME, ' ', E1.EMP_LNAME) AS Employee,
CONCAT(E2.EMP_FNAME, ' ', E2.EMP_LNAME) AS Manager
FROM EMP E1 LEFT JOIN EMP E2 ON E1.EMP_MGR = E2.EMP_NUM WHERE E1.EMP_MGR IS NOT NULL;
    
```

6. Write a SQL statement to list P_CODE and P_DESCRIFT of products that came in store (INDATE) in the month of February of 2018.

```

SELECT P_CODE, P_DESCRIFT
FROM PRODUCT WHERE P_INDATE BETWEEN '2018-02-01' AND '2018-02-28';
    
```