Database Systems SQL Project
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Queries 1-20:

```
SQL> start query1
SQL> SELECT PID, NAME
  2  FROM PRODUCTS
  3  INNER JOIN PROD_DISCNT ON PRODUCTS.DISCNT_CATEGORY =
PROD_DISCNT.DISCNT_CATEGORY
  4  WHERE (DISCNT_RATE*100) BETWEEN 10 AND 20 AND (QOH - 5) >=
(QOH_THRESHOLD);

PID  NAME
---- ---------------
p001 stapler
p004 pencil
p010 powerbank
p007 tablet
p009 facemask
p003 camera

6 rows selected.

SQL> start query2
SQL> SELECT FIRST_NAME || ' ' || LAST_NAME AS NAME
  2  FROM CUSTOMERS
  3  INNER JOIN PURCHASES ON CUSTOMERS.CID = PURCHASES.CID
  4  WHERE PUR_TIME BETWEEN TO_DATE('01-OCT-22', 'DD-MON-YY')
AND TO_DATE('31-OCT-22', 'DD-MON-YY') AND PHONE# LIKE '888%';

NAME
---------------------
John Hall

SQL> start query3
SQL> SELECT FIRST_NAME, PHONE# FROM CUSTOMERS
  2  INNER JOIN PURCHASES ON PURCHASES.CID = CUSTOMERS.CID
  3  WHERE PUR_TIME BETWEEN TO_DATE('01-OCT-22', 'DD-MON-YY')
AND TO_DATE('31-OCT-22', 'DD-MON-YY') AND PAYMENT > '100';

FIRST_NAME PHONE#
---------- ------------
Connie     777-555-7654
```

```
SQL>
SQL>
SQL>
SQL> start query4
SQL> SELECT PRODUCTS.PID, PRODUCTS.NAME FROM PRODUCTS
  2  INNER JOIN PURCHASES ON PURCHASES.PID = PRODUCTS.PID
  3  WHERE (UNIT_PRICE < 10) AND (PUR_TIME BETWEEN TO_DATE('01-
OCT-22', 'DD-MON-YY') AND TO_DATE('31-OCT-22', 'DD-MON-YY') OR
PUR_TIME BETWEEN TO_DATE('01-DEC-2022', 'DD-MON-YY') AND
TO_DATE('31-DEC-22'));

PID  NAME
---- ---------------
p004 pencil
p001 stapler

SQL>
SQL>
SQL>
SQL> start query5
SQL> SELECT PUR# FROM PURCHASES
  2  INNER JOIN CUSTOMERS ON PURCHASES.CID = CUSTOMERS.CID
  3  INNER JOIN PRODUCTS ON PRODUCTS.PID = PURCHASES.PID
  4  INNER JOIN EMPLOYEES ON EMPLOYEES.EID = PURCHASES.EID
  5  WHERE ((CUSTOMERS.FIRST_NAME LIKE 'K%' AND ORIG_PRICE < 15)
AND TELEPHONE# LIKE '888%');

      PUR#
----------
     10009

SQL>
SQL>
SQL>
SQL> start query6
SQL> SELECT PURCHASES.PUR#, PRODUCTS.NAME AS "product name",
TO_CHAR(PUR_TIME, 'FMMonth DD, YYYY') AS PUR_TIME,
PURCHASES.PAYMENT, PURCHASES.SAVING FROM PURCHASES
  2  INNER JOIN PRODUCTS ON PRODUCTS.PID = PURCHASES.PID;

      PUR# product name    PUR_TIME
---------- ---------------
-------------------------------------------------
   PAYMENT     SAVING
---------- ----------
     10009 stapler         December 12, 2022
      8.99          1
```

```
     10010 TV                October 19, 2022
   211.65       37.35

     10001 TV                August 12, 2022
   211.65       37.35


      PUR# product name     PUR_TIME
---------- --------------
-------------------------------------------
   PAYMENT       SAVING
---------- ----------
     10002 camera            December 20, 2022
    118.4      29.6

     10011 pencil            March 8, 2023
      8.9            1

     10003 pencil            October 8, 2022
      4.45          .5


      PUR# product name     PUR_TIME
---------- --------------
-------------------------------------------
   PAYMENT       SAVING
---------- ----------
     10004 chair             November 23, 2022
    79.96           20

     10008 lamp              August 16, 2022
    17.96        1.99

     10005 tablet            January 15, 2023
    179.1        19.9


      PUR# product name     PUR_TIME
---------- --------------
-------------------------------------------
   PAYMENT       SAVING
---------- ----------
     10012 computer          February 18, 2023
    748.5      249.5

     10006 facemask          February 20, 2023
```

```
          33.3          3.7

      10007 facemask        January 10, 2023
      49.95          5.55


       PUR# product name    PUR_TIME
    ---------- ---------------
    -------------------------------------------
      PAYMENT      SAVING
    ---------- ----------
      10013 facemask        August 30, 2022
       33.3          3.7

      10014 powerbank       November 14, 2022
        81          9


14 rows selected.

SQL> start query7
SQL> SELECT EMPLOYEES.EID, EMPLOYEES.NAME FROM EMPLOYEES
  2  WHERE EID NOT IN(
  3       SELECT PURCHASES.EID FROM PURCHASES
  4  );

EID NAME
--- ---------------
e05 Mike

SQL>
SQL>
SQL>
SQL> SELECT EMPLOYEES.EID, EMPLOYEES.NAME FROM EMPLOYEES
  2  WHERE NOT EXISTS(
  3       SELECT 1 FROM PURCHASES
  4       WHERE PURCHASES.EID = EMPLOYEES.EID
  5  );

EID NAME
--- ---------------
e05 Mike

SQL>
SQL> start query8
SQL> SELECT PROD_DISCNT.DISCNT_CATEGORY AS DCT,
PROD_DISCNT.DISCNT_RATE AS DCR
```

```
  2   FROM PROD_DISCNT
  3   LEFT JOIN PRODUCTS ON PRODUCTS.DISCNT_CATEGORY =
PROD_DISCNT.DISCNT_CATEGORY
  4   WHERE PRODUCTS.DISCNT_CATEGORY IS NULL;


       DCT        DCR
---------- ----------
         5         .3

SQL>
SQL>
SQL> start query9
SQL> SELECT CUSTOMERS.FIRST_NAME || ' ' || CUSTOMERS.LAST_NAME
AS NAME
  2   FROM CUSTOMERS
  3   WHERE VISITS_MADE > 1
  4   AND SYSDATE - LAST_VISIT_DATE >= 200;


NAME
--------------------
Kathy Cook
Chris Lewis
Dennis Hobbs
Connie Chen

SQL>
SQL> start query10
SQL> SELECT EMPLOYEES.EID, EMPLOYEES.NAME
  2   FROM EMPLOYEES
  3   /*LEFT JOIN PURCHASES ON EMPLOYEES.EID = PURCHASES.EID
  4   INNER JOIN PRODUCTS ON PRODUCTS.PID = PURCHASES.PID
  5   INNER JOIN PROD_DISCNT ON PROD_DISCNT.DISCNT_CATEGORY =
PRODUCTS.DISCNT_CATEGORY*/
  6   INNER JOIN PURCHASES ON EMPLOYEES.EID = PURCHASES.EID
  7   INNER JOIN PRODUCTS ON PRODUCTS.PID = PURCHASES.PID
  8   WHERE PRODUCTS.DISCNT_CATEGORY = 3
  9   GROUP BY EMPLOYEES.EID, EMPLOYEES.NAME
 10   HAVING COUNT(DISTINCT PRODUCTS.PID) = (
 11        SELECT COUNT(DISTINCT PID)
 12        FROM PRODUCTS
 13        WHERE DISCNT_CATEGORY = 3
 14   );


EID NAME
--- ---------------
e01 David
```

```
SQL> start query 11
SP2-0310: unable to open file "query.sql"
SQL> start query11
SQL> SELECT DISTINCT(PRODUCTS.PID), PRODUCTS.NAME
  2  FROM PRODUCTS
  3  INNER JOIN PURCHASES ON PURCHASES.PID = PRODUCTS.PID
  4  INNER JOIN EMPLOYEES ON EMPLOYEES.EID = PURCHASES.EID
  5  WHERE (ORIG_PRICE > 180) AND
  6  (EMPLOYEES.NAME LIKE 'A%' OR EMPLOYEES.NAME LIKE 'D%');

PID  NAME
---- ---------------
p002 TV
p007 tablet

SQL>
SQL>
SQL> start query12
SQL> SELECT CUSTOMERS.CID
  2  FROM customers
  3  JOIN PURCHASES ON CUSTOMERS.CID = PURCHASES.CID
  4  JOIN PRODUCTS ON PURCHASES.PID = PRODUCTS.PID
  5  WHERE CUSTOMERS.LAST_VISIT_DATE BETWEEN TO_DATE('01-
AUG-2022', 'DD-MON-YYYY') AND TO_DATE('31-AUG-2022', 'DD-MON-
YYYY')
  6    AND PRODUCTS.ORIG_PRICE BETWEEN 15 AND 20
  7  GROUP BY CUSTOMERS.CID
  8  HAVING COUNT(DISTINCT PRODUCTS.PID) = (
  9       SELECT COUNT(*) FROM PRODUCTS WHERE ORIG_PRICE
BETWEEN 15 AND 20
 10  );

CID
----
c005

SQL> start query13
SQL> SELECT CUSTOMERS.CID, CUSTOMERS.FIRST_NAME || ' ' ||
CUSTOMERS.LAST_NAME AS NAME FROM CUSTOMERS
  2  INNER JOIN PURCHASES ON PURCHASES.CID = CUSTOMERS.CID
  3  WHERE PURCHASES.PAYMENT = (
  4       SELECT MAX(PAYMENT)
  5       FROM PURCHASES
  6  );

CID  NAME
---- ---------------------
```

c003 Chris Lewis

```
SQL> start query14
SQL> SELECT PRODUCTS.PID, PRODUCTS.NAME,
  2            (PRODUCTS.ORIG_PRICE * PROD_DISCNT.DISCNT_RATE) AS
"discount amount"
  3   FROM PRODUCTS
  4   INNER JOIN PROD_DISCNT ON PRODUCTS.DISCNT_CATEGORY =
PROD_DISCNT.DISCNT_CATEGORY
  5   WHERE (PRODUCTS.ORIG_PRICE * PROD_DISCNT.DISCNT_RATE) = (
  6         SELECT MAX(PRODUCTS.ORIG_PRICE *
PROD_DISCNT.DISCNT_RATE)
  7         FROM PRODUCTS
  8         INNER JOIN PROD_DISCNT ON PRODUCTS.DISCNT_CATEGORY =
PROD_DISCNT.DISCNT_CATEGORY
  9   );
```

```
PID  NAME            discount amount
---- --------------- ---------------
p008 computer                 124.75
```

```
SQL> start query15
SQL> SELECT TO_CHAR(PUR_TIME, 'YYYY/MM') AS "Month",
SUM(PAYMENT) AS "Total Sale"
  2   FROM PURCHASES
  3   GROUP BY TO_CHAR(PUR_TIME, 'YYYY/MM')
  4   ORDER BY TO_CHAR(PUR_TIME, 'YYYY/MM');
```

```
Month    Total Sale
-------  ----------
2022/08      262.91
2022/10       216.1
2022/11      160.96
2022/12      127.39
2023/01      229.05
2023/02       781.8
2023/03         8.9
```

7 rows selected.

```
SQL> start query16
SQL> SELECT CUSTOMERS.CID, CUSTOMERS.FIRST_NAME, COUNT(DISTINCT
PURCHASES.PID) AS "Number of Different Products"
  2   FROM CUSTOMERS
  3   INNER JOIN PURCHASES ON CUSTOMERS.CID = PURCHASES.CID
  4   GROUP BY CUSTOMERS.CID, CUSTOMERS.FIRST_NAME;
```

```
CID   FIRST_NAME Number of Different Products
----  ---------- ----------------------------
c008 Joe                                    1
c002 John                                   1
c004 Mike                                   1
c001 Kathy                                  3
c007 Katie                                  1
c006 Connie                                 2
c003 Chris                                  3
c005 Dennis                                 2

8 rows selected.

SQL> start query17
SQL> SELECT CUSTOMERS.CID, CUSTOMERS.FIRST_NAME || ' ' ||
CUSTOMERS.LAST_NAME AS NAME
  2  FROM CUSTOMERS
  3  WHERE VISITS_MADE > ALL (
  4        SELECT VISITS_MADE FROM CUSTOMERS
  5        WHERE PHONE# LIKE '777%'
  6  );

CID   NAME
----  --------------------
c003 Chris Lewis
c001 Kathy Cook

SQL> start query18
SQL> SELECT PRODUCTS.PID, PRODUCTS.NAME, SUM(PURCHASES.QUANTITY)
AS "total quantity sold"
  2  FROM PRODUCTS
  3  INNER JOIN PURCHASES ON PRODUCTS.PID = PURCHASES.PID
  4  GROUP BY PRODUCTS.PID, PRODUCTS.NAME
  5  HAVING SUM(PURCHASES.QUANTITY) = (
  6        SELECT MAX(SUM_QUANTITY)
  7        FROM (
  8              SELECT SUM(QUANTITY) AS SUM_QUANTITY
  9              FROM PURCHASES
 10              GROUP BY PID
 11        )
 12  );

PID   NAME             total quantity sold
----  --------------   -------------------
p004 pencil                            15

SQL> start query19
```

```
SQL> SELECT CUSTOMERS.CID, CUSTOMERS.FIRST_NAME,
SUM(PURCHASES.PAYMENT) AS "total amount spent"
  2   FROM CUSTOMERS
  3   INNER JOIN PURCHASES ON CUSTOMERS.CID = PURCHASES.CID
  4   GROUP BY CUSTOMERS.CID, CUSTOMERS.FIRST_NAME
  5   ORDER BY "total amount spent" DESC
  6   FETCH FIRST 4 ROWS ONLY;

CID  FIRST_NAME total amount spent
---- ---------- ------------------
c003 Chris                  878.41
c001 Kathy                  363.35
c006 Connie                 220.55
c004 Mike                    179.1

SQL> start query20
SQL> SELECT PRODUCTS.PID, PRODUCTS.NAME
  2   FROM PRODUCTS
  3   INNER JOIN PURCHASES ON PRODUCTS.PID = PURCHASES.PID
  4   GROUP BY PRODUCTS.PID, PRODUCTS.NAME
  5   ORDER BY (SYSDATE - MAX(PURCHASES.PUR_TIME)) DESC
  6   FETCH FIRST 1 ROW ONLY;

PID  NAME
---- ---------------
p006 lamp

SQL>
SQL>
SQL> spool off
```