DATABASE USED : TPCH
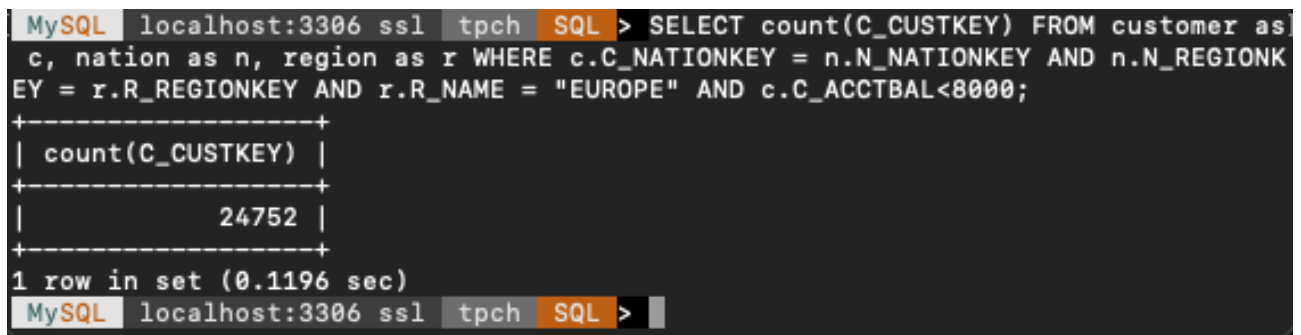
Q1. Query:

SELECT count(C_CUSTKEY) FROM customer as c, nation as n, region as r WHERE c.C_NATIONKEY = n.N_NATIONKEY AND n.N_REGIONKEY = r.R_REGIONKEY AND r.R_NAME = "EUROPE" AND c.C_ACCTBAL<8000;

```
MySQL  localhost:3306 ssl  tpch  SQL > SELECT count(C_CUSTKEY) FROM customer as
 c, nation as n, region as r WHERE c.C_NATIONKEY = n.N_NATIONKEY AND n.N_REGIONK
EY = r.R_REGIONKEY AND r.R_NAME = "EUROPE" AND c.C_ACCTBAL<8000;
+------------------+
| count(C_CUSTKEY) |
+------------------+
|            24752 |
+------------------+
1 row in set (0.1196 sec)
MySQL  localhost:3306 ssl  tpch  SQL >
```

Q2. Query:

SELECT
    r.R_NAME AS most_supplied_region,
    COUNT(DISTINCT p.P_PARTKEY) AS distinct_parts_count
FROM
    region as r
JOIN
    nation as n ON r.R_REGIONKEY = n.N_REGIONKEY
JOIN
    supplier as s ON n.N_NATIONKEY = s.S_NATIONKEY
JOIN
    partsupp as ps ON s.S_SUPPKEY = ps.PS_SUPPKEY
JOIN
    part as p ON ps.PS_PARTKEY = p.P_PARTKEY
GROUP BY
    r.R_NAME
ORDER BY
    distinct_parts_count DESC
LIMIT 1;

```
MySQL  localhost:33060+ ssl  tpch  SQL > SELECT
                                    ->     r.R_NAME AS most_supplied_region,
                                    ->     COUNT(DISTINCT p.P_PARTKEY) AS distinct_parts_count
                                -> FROM
                                    ->     region as r
                                -> JOIN
                                    ->     nation as n ON r.R_REGIONKEY = n.N_REGIONKEY
                                -> JOIN
                                    ->     supplier as s ON n.N_NATIONKEY = s.S_NATIONKEY
                                -> JOIN
                                    ->     partsupp as ps ON s.S_SUPPKEY = ps.PS_SUPPKEY
                                -> JOIN
                                    ->     part as p ON ps.PS_PARTKEY = p.P_PARTKEY
                                -> GROUP BY
                                    ->     r.R_NAME
                                -> ORDER BY
                                    ->     distinct_parts_count DESC
                                -> LIMIT 1;

+---------------------+----------------------+
| most_supplied_region | distinct_parts_count |
+---------------------+----------------------+
| AMERICA             |               119448 |
+---------------------+----------------------+
1 row in set (1.7815 sec)
MySQL  localhost:33060+ ssl  tpch  SQL >
```

Q3. Query:

SELECT l.L_ORDERKEY, l.L_QUANTITY FROM lineitem as l WHERE l.L_SHIPMODE= "TRUCK"
AND DATEDIFF(l.L_COMMITDATE, l.L_SHIPDATE) < (SELECT AVG(DATEDIFF(l.L_COM-
MITDATE, l.L_SHIPDATE)) FROM lineitem as l WHERE l.L_SHIPMODE = "TRUCK");

```
MySQL  localhost:33060+ ssl  tpch  SQL > SELECT l.L_ORDERKEY, l.L_QUANTITY FROM lineitem as l WHERE l.L_SHIPMODE= "TRUCK" AND DATEDIFF(l.L_COMMITDATE, l.L_SHIPDATE) < (SELECT AVG(DATEDIFF(l.L_COMMITDATE
, l.L_SHIPDATE)) FROM lineitem as l WHERE l.L_SHIPMODE = "TRUCK");
+-----------+------------+
| L_ORDERKEY | L_QUANTITY |
+-----------+------------+
|         1 |      17.00 |
|        32 |      28.00 |
|        37 |      43.00 |
|        67 |       5.00 |
|        69 |      48.00 |
|        96 |      23.00 |
|        96 |      30.00 |
|       129 |      46.00 |
|       132 |      43.00 |
|       134 |      12.00 |
|       161 |      19.00 |
|       163 |      13.00 |
|       163 |       5.00 |
|       163 |      12.00 |
|       167 |      28.00 |
|       192 |      25.00 |
|       195 |      41.00 |
|       258 |      45.00 |
|       258 |      25.00 |
|       263 |       9.00 |
|       263 |      50.00 |
|       291 |      21.00 |
|       292 |      24.00 |
|       295 |       8.00 |
|       323 |       9.00 |
|       326 |      41.00 |
|       326 |      31.00 |
|       327 |      16.00 |
|       355 |      41.00 |
|       356 |      35.00 |
|       358 |      41.00 |
|       384 |      38.00 |
|       384 |      11.00 |
|       384 |      14.00 |
|       387 |      32.00 |
|       391 |      14.00 |
|       421 |       1.00 |
|       448 |       8.00 |
|       454 |      24.00 |
|       484 |      49.00 |
|       484 |      45.00 |
|       486 |      38.00 |
|       519 |      13.00 |
|       546 |      16.00 |
|       548 |       6.00 |
|       551 |      20.00 |
|       581 |      30.00 |
|       583 |       1.00 |
|       583 |      13.00 |
|       612 |      28.00 |
|       613 |       3.00 |
|       614 |      21.00 |
|       640 |      40.00 |
|       640 |      22.00 |
|       644 |      11.00 |
|       644 |      23.00 |
|       645 |      49.00 |
|       646 |      24.00 |
```

Q4. Query:

```sql
    SELECT
  L_PARTKEY,
  P_NAME AS part_name
FROM
  lineitem AS  l
JOIN
  part p ON l.L_PARTKEY = p.P_PARTKEY
JOIN
  orders o ON l.L_ORDERKEY = o.O_ORDERKEY
JOIN
  customer c ON o.O_CUSTKEY = c.C_CUSTKEY
JOIN
  nation n ON c.C_NATIONKEY = n.N_NATIONKEY
JOIN
  region r ON r.R_REGIONKEY = n.N_REGIONKEY
WHERE
  l.L_DISCOUNT = 0
  AND r.R_NAME != 'EUROPE';
```

```
MySQL  localhost:33060+ ssl  tpch  SQL > SELECT
                                   ->     L_PARTKEY,
                                   ->     P_NAME AS part_name
                                   -> FROM
                                   ->     lineitem AS  l
                                   -> JOIN
                                   ->     part p ON l.L_PARTKEY = p.P_PARTKEY
                                   -> JOIN
                                   ->     orders o ON l.L_ORDERKEY = o.O_ORDERKEY
                                   -> JOIN
                                   ->     customer c ON o.O_CUSTKEY = c.C_CUSTKEY
                                   -> JOIN
                                   ->     nation n ON c.C_NATIONKEY = n.N_NATIONKEY
                                   -> JOIN
                                   ->     region r ON r.R_REGIONKEY = n.N_REGIONKEY
                                   -> WHERE
                                   ->     l.L_DISCOUNT = 0
                                   ->     AND r.R_NAME != 'EUROPE';
+----------+----------------------------------------+
| L_PARTKEY | part_name                             |
+----------+----------------------------------------+
|   106170 | steel chiffon pink puff chocolate      |
|    88362 | ivory dodger thistle royal olive       |
|    73815 | blanched seashell blue magenta metallic |
|   115118 | cyan linen papaya blanched lavender    |
|    34432 | snow almond orchid peach burlywood     |
|    96645 | white red saddle lemon cornflower      |
|   119477 | forest papaya cyan azure olive         |
|   109743 | honeydew cream steel sky pale          |
|   163334 | gainsboro azure sandy thistle lavender |
|   135137 | violet navajo green cornflower frosted |
|   140449 | antique dodger orange burlywood pale   |
|   103432 | grey chocolate lace red sky            |
|   198344 | peru forest ivory medium pink          |
|    86382 | white coral linen moccasin rose        |
|   190825 | orchid lavender steel dark chartreuse  |
|    58520 | red chartreuse rosy honeydew linen     |
|    97017 | blanched chartreuse medium seashell puff |
|   141003 | green burnished forest metallic tan    |
|   145146 | chartreuse cornsilk cornflower pale sienna |
|   130565 | grey blanched medium forest rosy       |
|   146071 | sandy smoke azure brown rose           |
|   131835 | aquamarine plum dodger honeydew dark   |
|    96909 | dark plum puff lemon midnight          |
|   106194 | firebrick midnight purple cornsilk grey |
|    50641 | papaya khaki tan azure antique         |
|    59620 | almond antique khaki frosted deep      |
|   119305 | antique azure midnight khaki smoke     |
|    77071 | rosy green spring maroon pale          |
|   165980 | pink ivory forest cornsilk navy        |
|    11158 | red beige misty deep salmon            |
|    92053 | sky drab thistle azure black           |
|    93563 | bisque smoke magenta tomato puff       |
|    69212 | rose olive moccasin linen royal        |
|    18552 | rosy chocolate ivory pale dodger       |
|    15978 | dim cyan cream thistle aquamarine      |
|    32694 | dodger antique midnight navajo sandy   |
|    76308 | lemon coral dim turquoise ivory        |
|   136884 | plum grey cyan orange powder           |
|    75437 | cream blanched khaki purple forest     |
```

Q5. Query:

SELECT C_NAME
FROM customer
WHERE C_CUSTKEY NOT IN (SELECT O_CUSTKEY FROM orders);

```
MySQL  localhost:33060+ ssl  tpch  SQL > SELECT C_NAME
                                      -> FROM customer
                                      -> WHERE C_CUSTKEY NOT IN (SELECT O_CUSTKEY FROM orders);
+--------------------+
| C_NAME             |
+--------------------+
| Customer#000000003 |
| Customer#000000006 |
| Customer#000000009 |
| Customer#000000012 |
| Customer#000000015 |
| Customer#000000018 |
| Customer#000000021 |
| Customer#000000024 |
| Customer#000000027 |
| Customer#000000030 |
| Customer#000000033 |
| Customer#000000036 |
| Customer#000000039 |
| Customer#000000042 |
| Customer#000000045 |
| Customer#000000048 |
| Customer#000000051 |
| Customer#000000054 |
| Customer#000000057 |
| Customer#000000060 |
| Customer#000000063 |
| Customer#000000066 |
| Customer#000000069 |
| Customer#000000072 |
| Customer#000000075 |
| Customer#000000078 |
| Customer#000000081 |
| Customer#000000084 |
| Customer#000000087 |
| Customer#000000090 |
| Customer#000000093 |
| Customer#000000096 |
| Customer#000000099 |
| Customer#000000102 |
| Customer#000000105 |
| Customer#000000108 |
| Customer#000000111 |
| Customer#000000114 |
| Customer#000000117 |
| Customer#000000120 |
| Customer#000000123 |
| Customer#000000126 |
| Customer#000000129 |
| Customer#000000132 |
| Customer#000000135 |
| Customer#000000138 |
| Customer#000000141 |
| Customer#000000144 |
| Customer#000000147 |
| Customer#000000150 |
| Customer#000000153 |
| Customer#000000156 |
| Customer#000000159 |
| Customer#000000162 |
| Customer#000000165 |
| Customer#000000168 |
| Customer#000000171 |
```

Q6. Query:

```
SELECT DISTINCT
    p.P_NAME AS item_name
FROM
    part as p
JOIN
    partsupp as ps ON p.P_PARTKEY = ps.PS_PARTKEY
JOIN
    supplier as s ON ps.PS_SUPPKEY = s.S_SUPPKEY
JOIN
    nation as n ON s.S_NATIONKEY = n.N_NATIONKEY
JOIN
```

```sql
    lineitem as l ON ps.PS_PARTKEY = l.L_PARTKEY AND ps.PS_SUPPKEY =
l.L_SUPPKEY
JOIN
    orders as o ON l.L_ORDERKEY = o.O_ORDERKEY
JOIN
    customer as c ON o.O_CUSTKEY = c.C_CUSTKEY
and c.C_NATIONKEY = n.N_NATIONKEY
WHERE
    n.N_NATIONKEY = (
        SELECT s2.S_NATIONKEY
        FROM
            supplier as s2
        GROUP BY
            s2.S_NATIONKEY
        ORDER BY
            AVG(s2.S_ACCTBAL) DESC
LIMIT 1
    );
```



```
MySQL  localhost:33060+ ssl  tpch  SQL > SELECT DISTINCT
    ->     p.P_NAME AS item_name
    -> FROM
    ->     part as p
    -> JOIN
    ->     partsupp as ps ON p.P_PARTKEY = ps.PS_PARTKEY
    -> JOIN
    ->     supplier as s ON ps.PS_SUPPKEY = s.S_SUPPKEY
    -> JOIN
    ->     nation as n ON s.S_NATIONKEY = n.N_NATIONKEY
    -> JOIN
    ->     lineitem as l ON ps.PS_PARTKEY = l.L_PARTKEY AND ps.PS_SUPPKEY = l.L_SUPPKEY
    -> JOIN
    ->     orders as o ON l.L_ORDERKEY = o.O_ORDERKEY
    -> JOIN
    ->     customer as c ON o.O_CUSTKEY = c.C_CUSTKEY
    -> and c.C_NATIONKEY = n.N_NATIONKEY
    -> WHERE
    ->     n.N_NATIONKEY = (
    ->         SELECT s2.S_NATIONKEY
    ->         FROM
    ->             supplier as s2
    ->         GROUP BY
    ->             s2.S_NATIONKEY
    ->         ORDER BY
    ->             AVG(s2.S_ACCTBAL) DESC
    -> LIMIT 1
    ->     );
+---------------------------------------------+
| item_name                                   |
+---------------------------------------------+
| antique black goldenrod linen salmon        |
| sienna aquamarine snow smoke coral          |
| sky black wheat misty burlywood             |
| chiffon mint coral aquamarine burnished     |
| dodger lace red blue light                  |
| sandy olive cornsilk powder red             |
| sky cyan blue sienna antique                |
| linen sandy firebrick rosy cream            |
| chartreuse cyan chiffon firebrick seashell  |
| cream navajo blue lawn bisque               |
| wheat blanched metallic cyan navy           |
| cornsilk midnight ghost azure cornflower    |
| olive deep floral peach chocolate           |
| sandy khaki azure coral brown               |
| mint tan maroon coral burlywood             |
| rose orchid drab navajo blue                |
| linen maroon chiffon cornflower misty       |
| slate navy red lavender purple              |
| chocolate cornsilk medium snow drab         |
| navajo seashell antique cyan navy           |
| dim olive aquamarine beige goldenrod        |
| steel midnight deep pink aquamarine         |
| puff burnished misty lime honeydew          |
| red lace navy chartreuse steel              |
| lavender sienna blush purple chiffon        |
| rose maroon red beige dodger                |
| chartreuse cornflower navy antique olive    |
| sandy blush linen sky burlywood             |
| orange saddle lavender puff sandy           |
| hot midnight blue salmon lime               |
| aquamarine blanched rosy midnight goldenrod |
| light tomato ivory white medium             |
```

Q7. Query:

```
    SELECT
   AVG(l.L_EXTENDEDPRICE) AS average_order_price
FROM
   lineitem l
JOIN
   part p ON l.L_PARTKEY = p.P_PARTKEY
WHERE
   p.P_SIZE <= 40;
```

```
MySQL  localhost:33060+ ssl  tpch  SQL > SELECT      AVG(l.L_EXTENDEDPRICE) AS a
verage_order_price FROM      lineitem l JOIN      part p ON l.L_PARTKEY = p.P_PART
KEY WHERE      p.P_SIZE <= 40;
+---------------------+
| average_order_price |
+---------------------+
|        38261.251431 |
+---------------------+
1 row in set (13.1757 sec)
```

Q8. Query:

```
SELECT s.S_NAME , COUNT(ps.PS_PARTKEY)
FROM supplier as s, partsupp as ps
WHERE
s.S_SUPPKEY= ps.PS_SUPPKEY
GROUP BY s.S_NAME
HAVING COUNT(ps.PS_PARTKEY) > 5;
```

```
MySQL  localhost:33060+ ssl  tpch  SQL > SELECT s.S_NAME , COUNT(ps.PS_PARTKEY)
                              -> FROM supplier as s, partsupp as ps
                              -> WHERE
                              -> s.S_SUPPKEY= ps.PS_SUPPKEY
                              -> GROUP BY s.S_NAME
                              -> HAVING COUNT(ps.PS_PARTKEY) > 5;
+-------------------+-----------------------+
| S_NAME            | COUNT(ps.PS_PARTKEY)  |
+-------------------+-----------------------+
| Supplier#000000002 |                  80 |
| Supplier#000002502 |                  80 |
| Supplier#000005002 |                  80 |
| Supplier#000007502 |                  80 |
| Supplier#000000003 |                  80 |
| Supplier#000002503 |                  80 |
| Supplier#000005003 |                  80 |
| Supplier#000007503 |                  80 |
| Supplier#000000004 |                  80 |
| Supplier#000002504 |                  80 |
| Supplier#000005004 |                  80 |
| Supplier#000007504 |                  80 |
| Supplier#000000005 |                  80 |
| Supplier#000002505 |                  80 |
| Supplier#000005005 |                  80 |
| Supplier#000007505 |                  80 |
| Supplier#000000006 |                  80 |
| Supplier#000002506 |                  80 |
| Supplier#000005006 |                  80 |
| Supplier#000007506 |                  80 |
| Supplier#000000007 |                  80 |
| Supplier#000002507 |                  80 |
| Supplier#000005007 |                  80 |
| Supplier#000007507 |                  80 |
| Supplier#000000008 |                  80 |
| Supplier#000002508 |                  80 |
| Supplier#000005008 |                  80 |
| Supplier#000007508 |                  80 |
| Supplier#000000009 |                  80 |
| Supplier#000002509 |                  80 |
| Supplier#000005009 |                  80 |
| Supplier#000007509 |                  80 |
| Supplier#000000010 |                  80 |
| Supplier#000002510 |                  80 |
| Supplier#000005010 |                  80 |
| Supplier#000007510 |                  80 |
| Supplier#000000011 |                  80 |
| Supplier#000002511 |                  80 |
| Supplier#000005011 |                  80 |
| Supplier#000007511 |                  80 |
| Supplier#000000012 |                  80 |
| Supplier#000002512 |                  80 |
| Supplier#000005012 |                  80 |
| Supplier#000007512 |                  80 |
| Supplier#000000013 |                  80 |
| Supplier#000002513 |                  80 |
| Supplier#000005013 |                  80 |
| Supplier#000007513 |                  80 |
| Supplier#000000014 |                  80 |
| Supplier#000002514 |                  80 |
| Supplier#000005014 |                  80 |
| Supplier#000007514 |                  80 |
| Supplier#000000015 |                  80 |
| Supplier#000002515 |                  80 |
```

Q9. Query:

SELECT DISTINCT
    p.P_NAME AS part_name
FROM
    part as p
JOIN
    partsupp as ps ON p.P_PARTKEY = ps.PS_PARTKEY
JOIN
    lineitem as l ON ps.PS_PARTKEY = l.L_PARTKEY
WHERE
    l.L_DISCOUNT = (
        SELECT
            MAX(l2.L_DISCOUNT)
        FROM
            lineitem as l2
    );

```
MySQL  localhost:33060+ ssl  tpch  SQL > SELECT DISTINCT
                                      ->     p.P_NAME AS part_name
                                      -> FROM
                                      ->     part as p
                                      -> JOIN
                                      ->     partsupp as ps ON p.P_PARTKEY = ps.PS_PARTKEY
                                      -> JOIN
                                      ->     lineitem as l ON ps.PS_PARTKEY = l.L_PARTKEY
                                      -> WHERE
                                      ->     l.L_DISCOUNT = (
                                      ->         SELECT
                                      ->             MAX(l2.L_DISCOUNT)
                                      ->         FROM
                                      ->             lineitem as l2
                                      ->     );
+------------------------------------------+
| part_name                                |
+------------------------------------------+
| almond antique blue royal burnished      |
| almond antique cornsilk midnight medium  |
| almond antique cyan lawn pale            |
| almond antique dodger blanched burnished |
| almond antique dodger royal pale         |
| almond antique khaki frosted deep        |
| almond antique lavender dark navajo      |
| almond antique linen floral lace         |
| almond antique magenta deep blush        |
| almond antique metallic honeydew green   |
| almond antique mint salmon moccasin      |
| almond antique orange white violet       |
| almond antique orchid burlywood cornsilk |
| almond antique orchid cornflower slate   |
| almond antique powder lawn linen         |
| almond antique powder pale lace          |
| almond antique puff snow ghost           |
| almond antique purple hot pale           |
| almond antique royal sandy lavender      |
| almond antique seashell papaya medium    |
| almond antique steel peru coral          |
| almond antique tomato pale powder        |
| almond aquamarine bisque pink medium     |
| almond aquamarine blue puff tan          |
| almond aquamarine brown cream orange     |
| almond aquamarine cornsilk rose metallic |
| almond aquamarine cyan indian rosy       |
| almond aquamarine deep saddle blue       |
| almond aquamarine drab sandy lawn        |
| almond aquamarine frosted tomato green   |
| almond aquamarine lawn honeydew frosted  |
| almond aquamarine medium plum white      |
| almond aquamarine mint misty red         |
| almond aquamarine mint olive drab        |
| almond aquamarine misty metallic dark    |
| almond aquamarine misty sandy plum       |
| almond aquamarine steel beige mint       |
| almond aquamarine steel blue metallic    |
| almond aquamarine tomato rose mint       |
| almond aquamarine yellow misty midnight  |
| almond azure antique puff pale           |
| almond azure aquamarine pale rosy        |
| almond azure beige cornsilk royal        |
| almond azure cornflower burlywood slate  |
| almond azure cornflower honeydew blush   |
```