Database Report

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June 17, 2024

Question 1

For each of the above query descriptions Q1, Q2, Q3, generate SQL queries by using ChatGPT. Show the generated queries.

- Q1: Find mid of menuitems such that the number of guests who ordered the menuitem only once is maximum. Report such mid and the maximum number of guests.

```
WITH GuestOrderCount AS (
    SELECT o.mid, o.gid, COUNT(*) AS order_count
    FROM Order o
    GROUP BY o.mid, o.gid
),
MenuItemGuestCount AS (
    SELECT mid, COUNT(gid) AS guest_count
    FROM GuestOrderCount
    WHERE order_count = 1
    GROUP BY mid
)
SELECT mid, guest_count
FROM MenuItemGuestCount
ORDER BY guest_count DESC
LIMIT 1;
```

- Q2: Find guests who always order an item that is most expensive within the table.

```
-- Step 1: Identify the most expensive menu item
WITH MostExpensiveItem AS (
    SELECT mid, price
    FROM MenuItem
    WHERE price = (SELECT MAX(price) FROM MenuItem)
),
```

```
-- Step 2: Find guests who have only ordered the most expensive item
GuestOrders AS (
    SELECT gid
    FROM Order
    WHERE mid IN (SELECT mid FROM MostExpensiveItem)
    GROUP BY gid
    HAVING COUNT(DISTINCT mid) = (SELECT COUNT(*) FROM MostExpensiveItem)
),

-- Step 3: Ensure these guests have not ordered any other items
GuestValid AS (
    SELECT go.gid
    FROM GuestOrders go
    LEFT JOIN Order o ON go.gid = o.gid
    LEFT JOIN MostExpensiveItem mei ON o.mid = mei.mid
    GROUP BY go.gid
    HAVING COUNT(DISTINCT o.mid) = COUNT(DISTINCT mei.mid)
)

-- Step 4: Select the guests who meet the criteria
SELECT g.gid, g.tableid
FROM Guest g
JOIN GuestValid gv ON g.gid = gv.gid;
```

- Q3: Find the golden guest pair such that their total amount in two visits is maximum than any other guest pairs. Guest pairs are any two guests coming on the same day and occupy one table by the two.

```
WITH GuestVisitAmount AS (
    SELECT
        g1.gid AS gid1,
        g2.gid AS gid2,
        g1.tableid,
        o1.date,
        SUM(o1.quantity * m1.price) AS amount1,
        SUM(o2.quantity * m2.price) AS amount2,
        SUM(o1.quantity * m1.price) + SUM(o2.quantity * m2.price) AS total_amou
    FROM
        Guest g1
        JOIN Guest g2 ON g1.tableid = g2.tableid AND g1.gid < g2.gid
        JOIN Order o1 ON g1.gid = o1.gid
        JOIN Order o2 ON g2.gid = o2.gid AND o1.date = o2.date
        JOIN MenuItem m1 ON o1.mid = m1.mid
        JOIN MenuItem m2 ON o2.mid = m2.mid
```

```
    GROUP BY
        g1.gid, g2.gid, g1.tableid, o1.date
),

MaxTotalAmount AS (
    SELECT
        gid1, gid2, total_amount
    FROM
        GuestVisitAmount
    ORDER BY
        total_amount DESC
    LIMIT 1
)

SELECT
    mta.gid1, mta.gid2, mta.total_amount
FROM
    MaxTotalAmount mta;
```