Cloud Hands On 11

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Query 1:

```
SELECT

  "date",

  SUM(CAST(amount AS DOUBLE)) AS daily_sales,

  SUM(SUM(CAST(amount AS DOUBLE))) OVER (ORDER BY "date" ASC) AS
cumulative_sales

FROM

  "AwsDataCatalog"."handson_output_db"."raw"

WHERE

  status IN ('Shipped', 'Shipped - Delivered to Buyer')

  AND substr("date", 7, 2) = '22'  -- Assuming 2022 (based on '04-30-22' format)

GROUP BY

  "date"

ORDER BY

  "date" ASC

LIMIT 10;
```

Query 2:

```
SELECT

  "ship-state",

  SUM(CAST("Amount" AS DOUBLE)) AS total_cancelled_amount

FROM

  "AwsDataCatalog"."handson_output_db"."raw"
```

WHERE

  "Status" = 'Cancelled'

GROUP BY

  "ship-state"

ORDER BY

  total_cancelled_amount DESC

LIMIT 10;

Query 3:

SELECT

  "Category",

  CASE

    WHEN "promotion-ids" IS NULL THEN 'No Promotion'

    ELSE 'With Promotion'

  END AS promotion_applied,

  COUNT(*) AS total_orders,

  SUM(CAST("Amount" AS DOUBLE)) AS total_sales_amount,

  AVG(CAST("Amount" AS DOUBLE)) AS average_sale_amount

FROM

  "AwsDataCatalog"."handson_output_db"."raw"

WHERE

  "Status" IN ('Shipped', 'Shipped - Delivered to Buyer')

GROUP BY

  "Category",

  CASE

    WHEN "promotion-ids" IS NULL THEN 'No Promotion'

    ELSE 'With Promotion'

```
        END
ORDER BY
    "Category" ASC,
    total_sales_amount DESC
LIMIT 10;
```

Query 4:

```
WITH ranked_products AS (
    SELECT
        "Category" AS category,
        "SKU" AS sku,
        SUM("Amount") AS total_revenue,
        RANK() OVER (
            PARTITION BY "Category"
            ORDER BY SUM("Amount") DESC
        ) AS rank_in_category
    FROM handson_output_db.raw
    GROUP BY "Category", "SKU"
)
SELECT
    category,
    sku,
    total_revenue,
    rank_in_category
FROM ranked_products
WHERE rank_in_category <= 3
LIMIT 10;
```

Query 5:

WITH MonthlyMetrics AS (

  SELECT

    date_trunc('month', date_parse("Date", '%m-%d-%y')) AS sales_month,

    SUM(CAST("Amount" AS DOUBLE)) AS total_sales,

    SUM(CAST("Qty" AS BIGINT)) AS total_quantity

  FROM

    "AwsDataCatalog"."handson_output_db"."raw"

  WHERE

    "Status" IN ('Shipped', 'Shipped - Delivered to Buyer')

  GROUP BY

    date_trunc('month', date_parse("Date", '%m-%d-%y'))

)

SELECT

  sales_month,

  total_sales,

  total_quantity,

  LAG(total_sales, 1) OVER (ORDER BY sales_month ASC) AS previous_month_sales,

  LAG(total_quantity, 1) OVER (ORDER BY sales_month ASC) AS previous_month_quantity,

  CASE

    WHEN LAG(total_sales, 1) OVER (ORDER BY sales_month ASC) > 0

    THEN (total_sales - LAG(total_sales, 1) OVER (ORDER BY sales_month ASC))

      / LAG(total_sales, 1) OVER (ORDER BY sales_month ASC)

    ELSE NULL

```sql
        END AS sales_mom_growth_rate,


    CASE

        WHEN LAG(total_quantity, 1) OVER (ORDER BY sales_month ASC) > 0

        THEN (CAST(total_quantity AS DOUBLE) - LAG(total_quantity, 1) OVER (ORDER BY
sales_month ASC))

            / LAG(total_quantity, 1) OVER (ORDER BY sales_month ASC)

        ELSE NULL

    END AS quantity_mom_growth_rate


FROM

    MonthlyMetrics

ORDER BY

    sales_month ASC

LIMIT 10;
```