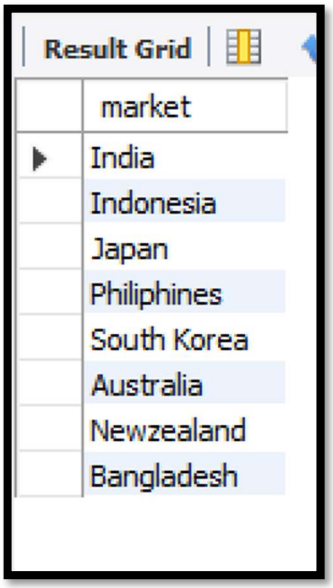
# Question (1)

**Provide the list of markets in which customer "Atliq Exclusive" operates its business in the APAC region.**

**Input Code:**

```
SELECT DISTINCT market
FROM dim_customer
WHERE customer = "Atliq Exclusive" AND region = "APAC";
```

**Output:**



# Question (2)

**What is the percentage of unique product increase in 2021 vs. 2020? The final output contains these fields:**

**unique_products_2020,**

**unique_products_2021,**

**percentage_change**

**Input Code:**

```
WITH cte AS (SELECT
                (SELECT COUNT(DISTINCT product_code)
                 FROM fact_sales_monthly
                 WHERE fiscal_year = 2020) AS unique_products_2020,
                (SELECT COUNT(DISTINCT product_code)
                FROM fact_sales_monthly
                WHERE fiscal_year = 2021) AS unique_products_2021)
SELECT
    unique_products_2020,
    unique_products_2021,
    ROUND((unique_products_2021 - unique_products_2020)*100/unique_products_2020, 2) AS percentage_change
FROM cte;
```

**Output:**

| unique_products_2020 | unique_products_2021 | percentage_change |
|---|---|---|
| 245 | 334 | 36.33 |

## Question (3)

**Provide a report with all the unique product counts for each segment and sort them in descending order of product counts. The final output contains 2 fields:**

**segment,**

**product_count**

**Input Code:**

```
SELECT
    segment,
    COUNT(DISTINCT product_code) AS unique_products
FROM dim_product
GROUP BY segment
ORDER BY unique_products DESC;
```

**Output:**

Result Grid | Filter Rows:

| segment | unique_products |
|---|---|
| Notebook | 129 |
| Accessories | 116 |
| Peripherals | 84 |
| Desktop | 32 |
| Storage | 27 |
| Networking | 9 |

# Question (4)

**Follow-up: Which segment had the most increase in unique products in 2021 vs 2020? The final output contains these fields:**

**segment,**

**product_count_2020,**

**product_count_2021,**

**difference**

**Input Code:**

```
WITH cte_2020 AS (SELECT segment,
                         COUNT(DISTINCT product_code) product_counts_2020
                  FROM fact_sales_monthly
                  JOIN dim_product USING (product_code)
                  WHERE fiscal_year = 2020
                  GROUP BY segment),
     cte_2021 AS (SELECT segment,
                         COUNT(DISTINCT product_code) product_counts_2021
                  FROM fact_sales_monthly
                  JOIN dim_product USING (product_code)
                  WHERE fiscal_year = 2021
                  GROUP BY segment)
     SELECT
         cte_2020.segment,
         cte_2020.product_counts_2020,
         cte_2021.product_counts_2021,
         (cte_2021.product_counts_2021 - cte_2020.product_counts_2020) AS difference
     FROM cte_2020
     JOIN cte_2021 USING(segment)
     ORDER BY difference DESC;
```

**Output:**

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

| segment | product_counts_2020 | product_counts_2021 | difference |
|---|---|---|---|
| Accessories | 69 | 103 | 34 |
| Notebook | 92 | 108 | 16 |
| Peripherals | 59 | 75 | 16 |
| Desktop | 7 | 22 | 15 |
| Storage | 12 | 17 | 5 |
| Networking | 6 | 9 | 3 |

## Question (5)

**Get the products that have the highest and lowest manufacturing costs. The final output should contain these fields:**

**product_code,**

**product,**

**manufacturing_cost**

**Input Code:**

```
SELECT
    p.product_code,
    p.product,
    c.manufacturing_cost
FROM dim_product p
join fact_manufacturing_cost c
ON p.product_code = c.product_code
WHERE c.manufacturing_cost = (SELECT MAX(manufacturing_cost) FROM fact_manufacturing_cost)
UNION
SELECT
    p.product_code,
    p.product,
    c.manufacturing_cost
FROM dim_product p
join fact_manufacturing_cost c
ON p.product_code = c.product_code
WHERE c.manufacturing_cost = (SELECT MIN(manufacturing_cost) FROM fact_manufacturing_cost)
```

**Output:**

Result Grid | Filter Rows: | Export:

| product_code | product | manufacturing_cost |
|---|---|---|
| A6120110206 | AQ HOME Allin1 Gen 2 | 240.5364 |
| A2118150101 | AQ Master wired x1 Ms | 0.8920 |

# Question (6)

**Generate a report which contains the top 5 customers who received an average high pre_invoice_discount_pct for the fiscal year 2021 and in the Indian market. The final output contains these fields:**

**customer_code,**

**customer,**

**average_discount_percentage**

**Input Code:**

```
SELECT
    d.customer_code,
    c.customer,
    AVG(pre_invoice_discount_pct) AS average_discount_percentage
FROM fact_pre_invoice_deductions d
JOIN dim_customer c
ON d.customer_code = c.customer_code
WHERE d.fiscal_year = 2021 AND market = "India"
GROUP BY d.customer_code, c.customer
ORDER BY average_discount_percentage DESC
LIMIT 5;
```

**Output:**

| customer_code | customer | average_discount_percentage |
|---|---|---|
| 90002009 | Flipkart | 0.30830000 |
| 90002006 | Viveks | 0.30380000 |
| 90002003 | Ezone | 0.30280000 |
| 90002002 | Croma | 0.30250000 |
| 90002016 | Amazon | 0.29330000 |

# Question (7)

**Get the complete report of the Gross sales amount for the customer "Atliq Exclusive" for each month. This analysis helps to get an idea of low and high-performing months and take strategic decisions. The final report contains these columns:**

**Month,**

**Year,**

**Gross sales Amount**

**Input Code:**

```
SELECT
    MONTHNAME(s.date) AS month,
    YEAR(s.date) AS year,
    ROUND(SUM(s.sold_quantity*g.gross_price), 2) AS gross_sales_amount
FROM fact_sales_monthly s
JOIN fact_gross_price g
    ON s.product_code = g.product_code AND s.fiscal_year = g.fiscal_year
JOIN dim_customer c
    ON s.customer_code = c.customer_code
WHERE c.customer = "Atliq Exclusive"
GROUP BY s.date, year, month
ORDER BY s.date;
```

**Output:**

Result Grid | Filter Rows:

| month | year | gross_sales_amount |
|---|---|---|
| September | 2019 | 4496259.67 |
| October | 2019 | 5135902.35 |
| November | 2019 | 7522892.56 |
| December | 2019 | 4830404.73 |
| January | 2020 | 4740600.16 |
| February | 2020 | 3996227.77 |
| March | 2020 | 378770.97 |
| April | 2020 | 395035.35 |
| May | 2020 | 783813.42 |
| June | 2020 | 1695216.60 |
| July | 2020 | 2551159.16 |
| August | 2020 | 2786648.26 |
| September | 2020 | 12353509.79 |
| October | 2020 | 13218636.20 |
| November | 2020 | 20464999.10 |
| December | 2020 | 12944659.65 |
| January | 2021 | 12399392.98 |
| February | 2021 | 10129735.57 |
| March | 2021 | 12144061.25 |
| April | 2021 | 7311999.95 |
| May | 2021 | 12150225.01 |
| June | 2021 | 9824521.01 |
| July | 2021 | 12092346.32 |
| August | 2021 | 7178707.59 |

# Question (8)

**In which quarter of 2020, got the maximum total_sold_quantity? The final output contains these fields sorted by the total_sold_quantity:**

**Quarter,**

**total_sold_quantity**

**Input Code:**

```
SELECT
    CASE
        WHEN MONTH(DATE_ADD(date, INTERVAL 4 MONTH)) IN (1,2,3) THEN "Q1"
        WHEN MONTH(DATE_ADD(date, INTERVAL 4 MONTH)) IN (4,5,6) THEN "Q2"
        WHEN MONTH(DATE_ADD(date, INTERVAL 4 MONTH)) IN (7,8,9) THEN "Q3"
        WHEN MONTH(DATE_ADD(date, INTERVAL 4 MONTH)) IN (10,11,12) THEN "Q4"
    END AS Quarter,
        ROUND(SUM(sold_quantity)/1000000, 2) AS total_sold_quantity_mln
    FROM fact_sales_monthly
    WHERE fiscal_year = 2020
    GROUP BY Quarter
    ORDER BY total_sold_quantity_mln DESC;
```

**Output:**

Result Grid | Filter Rows:

| Quarter | total_sold_quantity_mln |
|---|---|
| Q1 | 7.01 |
| Q2 | 6.65 |
| Q4 | 5.04 |
| Q3 | 2.08 |

# Question (9)

**Which channel helped to bring more gross sales in the fiscal year 2021 and the percentage of contribution? The final output contains these fields:**

**channel,**

**gross_sales_mln,**

**percentage**

**Input Code:**

```
WITH cte AS (SELECT
                c.channel,
                ROUND(SUM(s.sold_quantity*g.gross_price/1000000),2) AS gross_sales_mln
            FROM fact_sales_monthly s
            JOIN fact_gross_price g
                ON g.product_code = s.product_code AND g.fiscal_year = s.fiscal_year
            JOIN dim_customer c
                ON c.customer_code = s.customer_code
            WHERE s.fiscal_year = 2021
            GROUP BY c.channel)
SELECT
    channel,
    gross_sales_mln,
    ROUND((gross_sales_mln*100/SUM(gross_sales_mln) OVER()), 2) AS percentage
FROM cte
GROUP BY channel, gross_sales_mln;
```

**Output:**

Result Grid | Filter Rows: | Exp

| channel | gross_sales_mln | percentage |
|---|---|---|
| Direct | 257.53 | 15.47 |
| Retailer | 1219.08 | 73.23 |
| Distributor | 188.03 | 11.30 |

# Question (10)

**Get the Top 3 products in each division that have a high total_sold_quantity in the fiscal_year 2021?**

**The final output contains these fields:**

**division,**

**product_code,**

**product,**

**total_sold_quantity,**

**rank_order**

**Input Code:**

```
WITH cte1 AS (SELECT
            p.division,
            p.product_code,
            p.product,
            SUM(s.sold_quantity) AS total_sales
        FROM fact_sales_monthly s
        JOIN dim_product p
        ON s.product_code = p.product_code
        WHERE fiscal_year = 2021
        GROUP BY 1,2,3),
        cte2 AS (SELECT *,
                    RANK() OVER (PARTITION BY division ORDER BY total_sales DESC) AS rank_order
                FROM cte1)
SELECT *
FROM cte2
WHERE rank_order <=3;
```

**Output:**

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

| division | product_code | product | total_sales | rank_order |
|---|---|---|---|---|
| N & S | A6720160103 | AQ Pen Drive 2 IN 1 | 701373 | 1 |
| N & S | A6818160202 | AQ Pen Drive DRC | 688003 | 2 |
| N & S | A6819160203 | AQ Pen Drive DRC | 676245 | 3 |
| P & A | A2319150302 | AQ Gamers Ms | 428498 | 1 |
| P & A | A2520150501 | AQ Maxima Ms | 419865 | 2 |
| P & A | A2520150504 | AQ Maxima Ms | 419471 | 3 |
| PC | A4218110202 | AQ Digit | 17434 | 1 |
| PC | A4319110306 | AQ Velocity | 17280 | 2 |
| PC | A4218110208 | AQ Digit | 17275 | 3 |