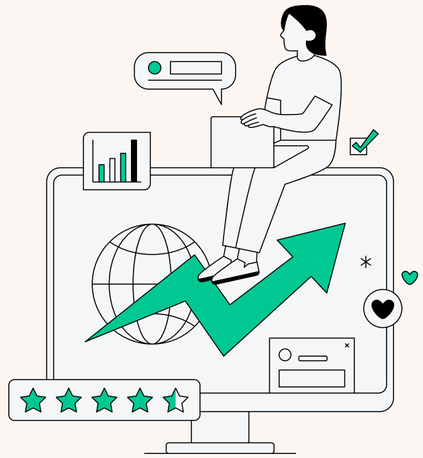
CODE BASICS



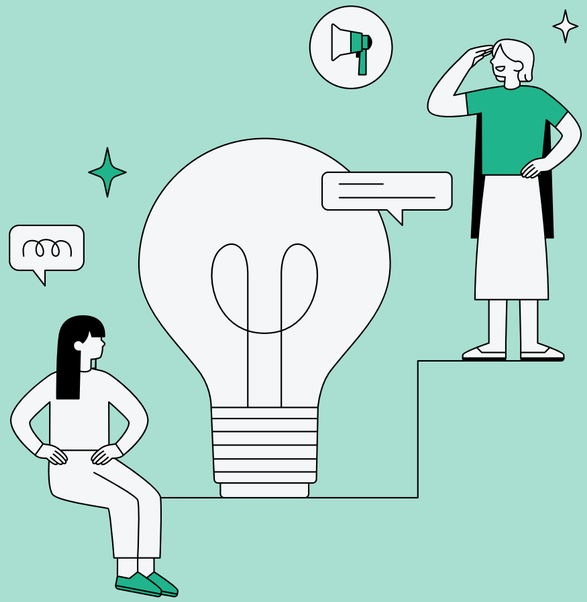
# Consumer Goods

## Ad_Hoc Insights

### SQL Project Challenge

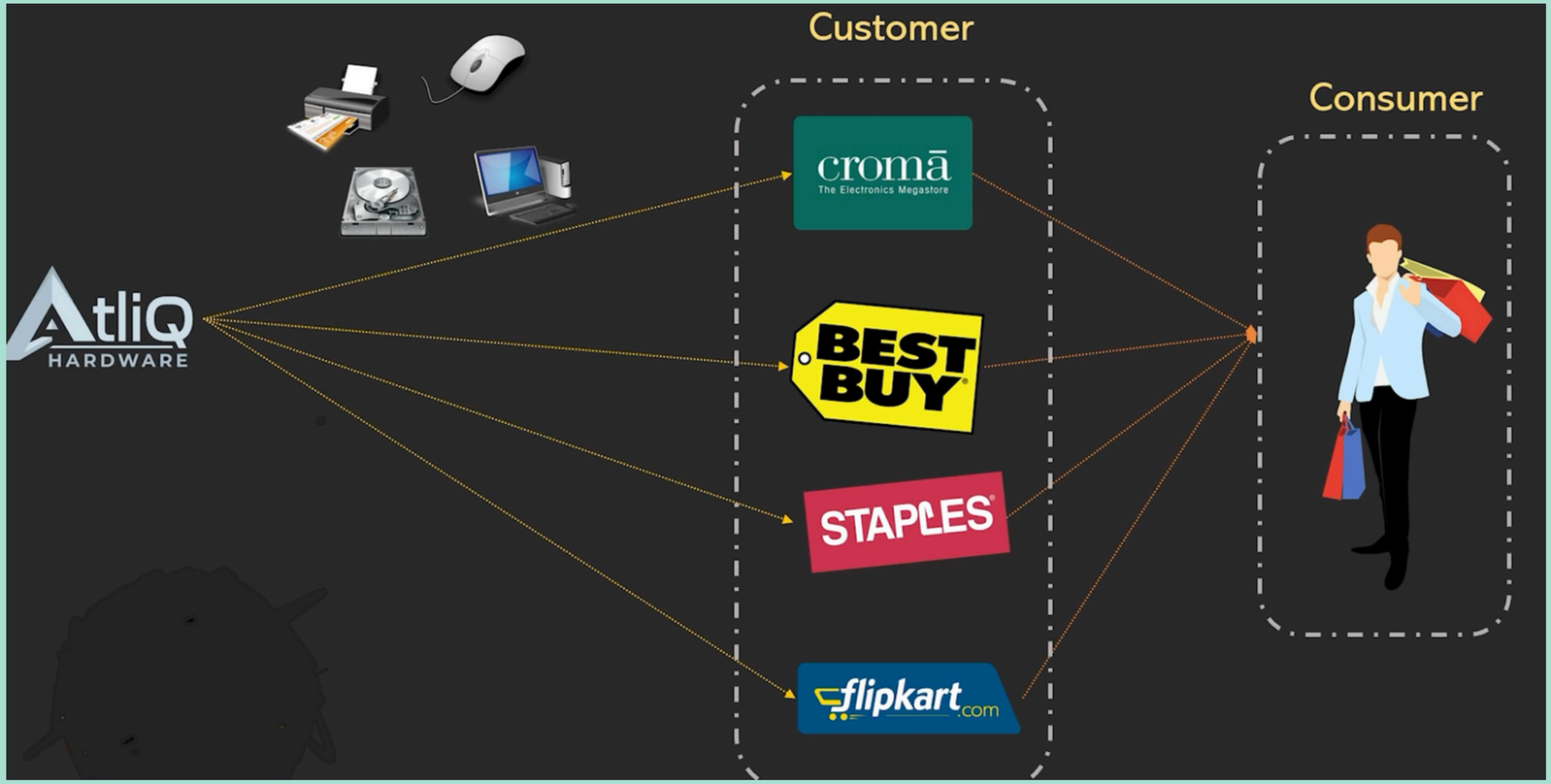
Presented by Ramya Karthikeyan

# Introduction



- Atliq Hardwares seeks to bolster its data analytics team with junior data analysts proficient in SQL.
- The SQL challenge, designed by Data Analytics Director Tony Sharma, evaluates candidates' technical and soft skills.
- Candidates will demonstrate SQL proficiency through querying the company's database to extract insights and solve business problems.
- Evaluation criteria include accuracy of SQL queries, clarity of communication, data analysis ability, and teamwork.
- Hiring skilled data analysts will enable Atliq Hardwares to make informed decisions quickly and drive business growth.

# Atliq Hardwares is a leading computer hardware producer in India with a global presence.



# Atliq Hardware Product Portfolio Overview

**Division**: PC (Personal Computing) and N & S (Networking and Storage)
**Segment**: Notebooks, Desktops, Peripherals, and Accessories
**Category**: Various hardware components and devices
**Variants:**

- Premium Misty Green
- Premium Black
- Plus Cool Blue
- Plus Firey Red
- Standard Black
- Standard Cool Blue
- Standard Firey Red

1.Provide the list of markets in which customer "AtliqExclusive" operatesits business in the APAC region.

```
SELECT Market FROM dim_customer
WHERE region = 'APAC' and customer = 'Atliq Exclusive';
```

Output:

Result Grid

| Market |
|---|
| India |
| Indone… |
| Japan |
| Philiphi… |
| South… |
| Australia |
| Newze… |
| Bangla… |
| India |

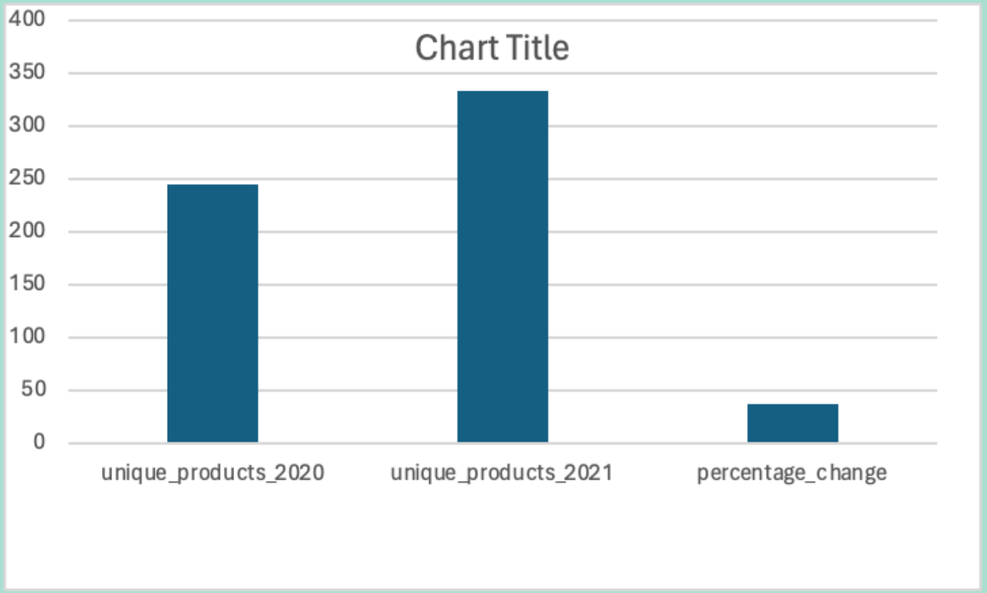
## 2.What is the percentage of unique product increase in 2021 vs. 2020? The final output contains these fields, unique_products_2020 ,unique_products_2021 ,percentage_chg

```
with p2020 as
(select count( distinct product_code) as unique_products_2020,
fiscal_year FROM fact_forecast_monthly where fiscal_year =2020),
p2021 as
(select count(distinct product_code) as unique_products_2021, fiscal_year
FROM fact_forecast_monthly where fiscal_year =2021)
Select
p2020.unique_products_2020,p2021.unique_products_2021,round((p2021.
unique_products_2021 -
p2020.unique_products_2020)*100/p2020.unique_products_2020,2) as
percentage_change
from  p2020,p2021;
```

# Output:

**Result Grid** Filter Rows: Search Export:

| unique_products_2020 | unique_products_2021 | percentage_chan... |
|---|---|---|
| 245 | 334 | 36.33 |



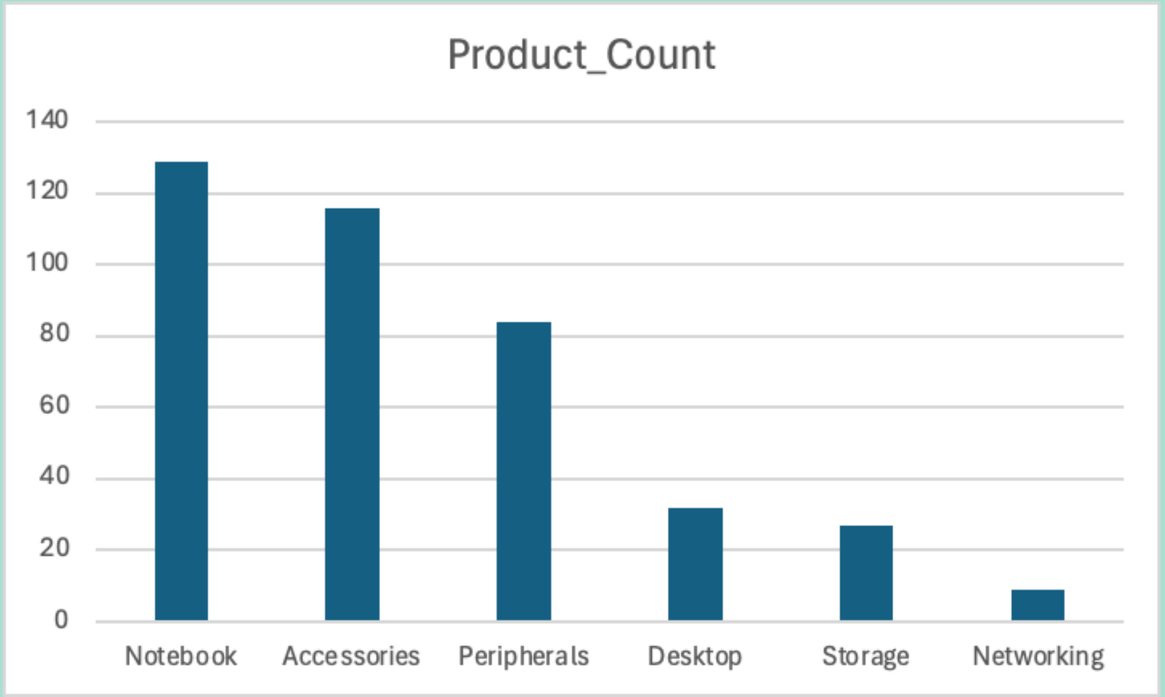
3.Provide a report with all the unique product counts for each segment and sort them in descending order of product counts. The final output contains 2 fields,
segment, product_count

```
Select segment,count(distinct product_code) as
Product_Count from dim_product
group by segment
order by Product_Count desc;
```

Output:

Result Grid | Filter Rc

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



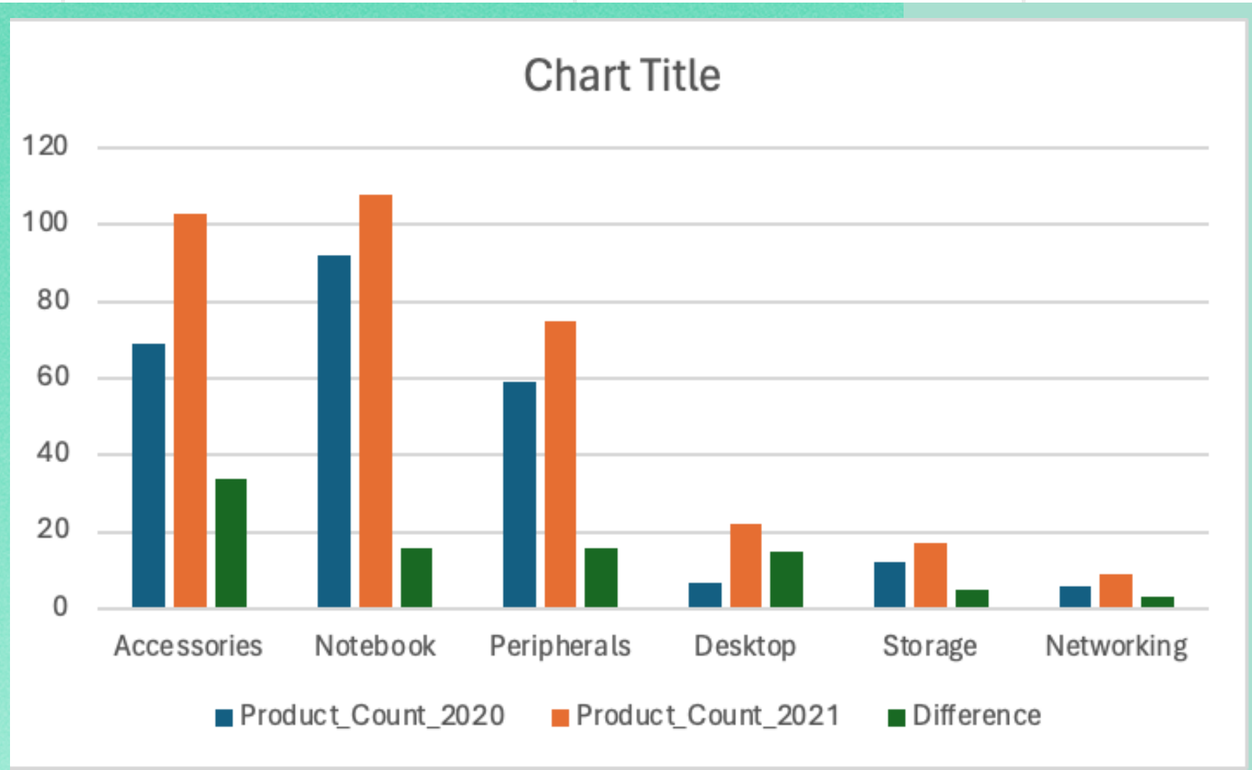
4. Follow-up: Which segment had the most increase in unique products in 2021 vs 2020? The final output contains these fields,
segment product_count_2020 product_count_2021 difference.

```
With P2020 as
(Select P.segment,M.fiscal_year,Count(distinct P.product_code) as
Product_Count_2020 from
dim_product P
Join
fact_sales_monthly M
ON P.product_code = M.product_code
Where fiscal_year =2020
Group By segment, M.fiscal_year),
P2021 as
(Select P.segment,M.fiscal_year,Count(Distinct P.product_code) As
Product_Count_2021 From
dim_product P
Join
fact_sales_monthly M
ON P.product_code = M.product_code
Where fiscal_year =2021
Group By segment, M.fiscal_year)
Select P2020.segment,
P2020.Product_Count_2020,P2021.Product_Count_2021,
P2021.Product_Count_2021-P2020.Product_Count_2020 as Difference From
P2020
Join P2021
On P2020.segment =P2021.segment
Order By Difference Desc;
```

Output:

**Result Grid** Filter Rows: Search Export:

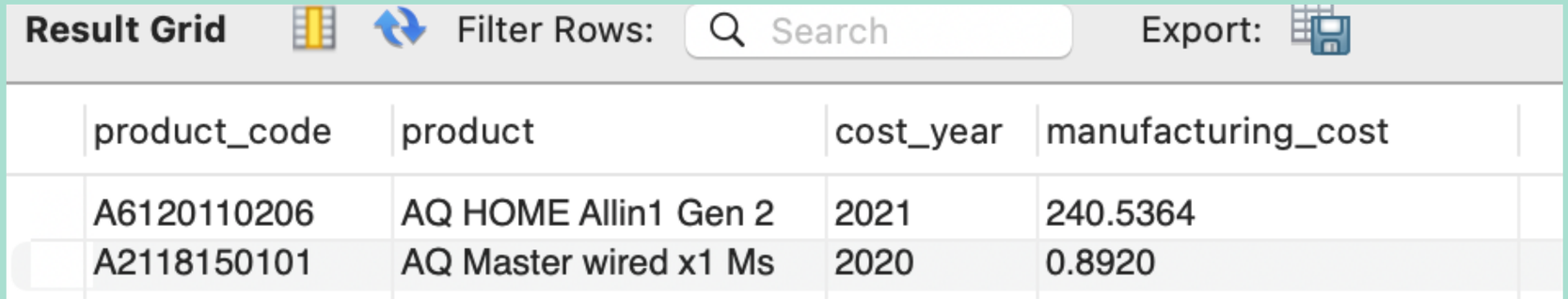
| segment | Product_Count_2020 | Product_Count_20... | Difference |
|---|---|---|---|
| Accessories | 69 | 103 | 34 |
| Notebook | 92 | 108 | 16 |
| Peripherals | 59 | 75 | 16 |
| Desktop | 7 | 22 | 15 |
| Storage | 12 | 17 | 5 |
| Networking | 6 | 9 | 3 |



5.Get the products that have the highest and lowest manufacturing costs. The final output should contain these fields,
product_code product manufacturing_cost

```
Select P.product_code,P.product,fmc.cost_year,fmc.manufacturing_cost
from fact_manufacturing_cost fmc
Join dim_product P
On fmc.product_code = P.product_code
where fmc.manufacturing_cost
In
(Select  Max(manufacturing_cost) from fact_manufacturing_cost
Union
Select Min(manufacturing_cost) from fact_manufacturing_cost)
Order By fmc.manufacturing_cost desc;
```

Output:




| product_code | product | cost_year | manufacturing_cost |
|---|---|---|---|
| A6120110206 | AQ HOME Allin1 Gen 2 | 2021 | 240.5364 |
| A2118150101 | AQ Master wired x1 Ms | 2020 | 0.8920 |

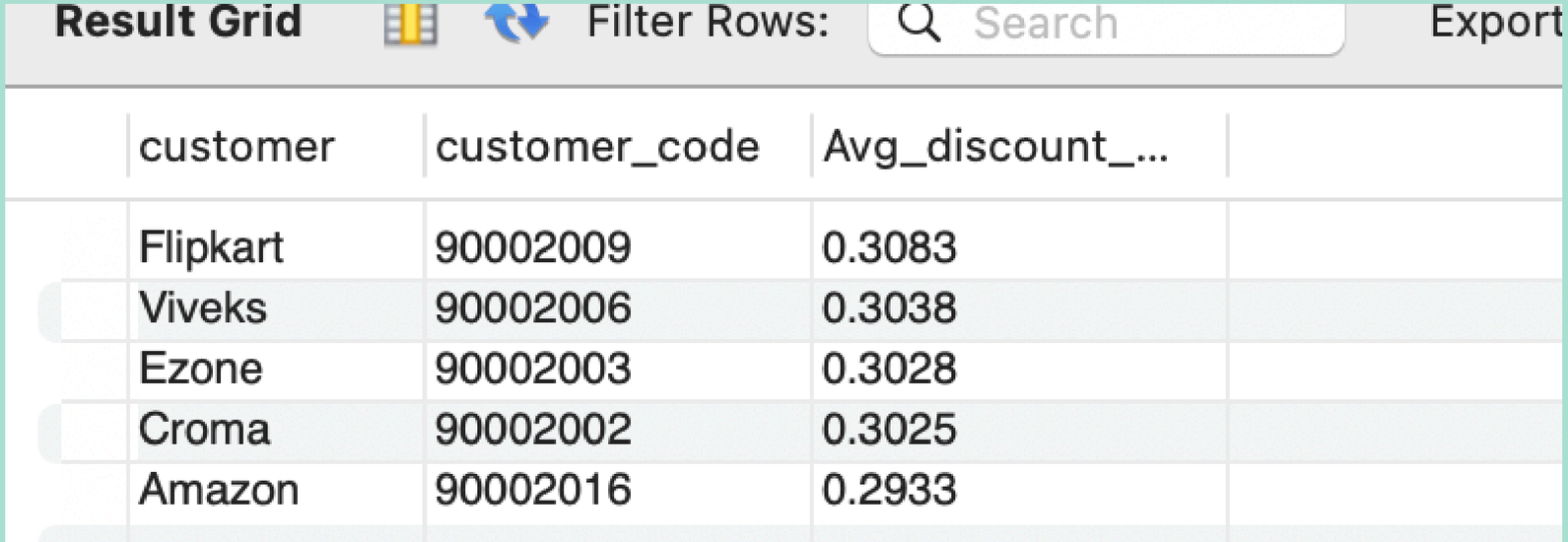
6.Generate a report which contains the top 5 customers who received an average high pre_invoice_discount_pct for the fiscal year 2021 and in the Indian market. The final output contains these fields,

customer_code

customer average_discount_percentage

```
Select C.customer,C.customer_code,Round(avg(PD.pre_invoice_discount_pct),4) as Avg_discount_Pct from
dim_customer C
Join fact_pre_invoice_deductions PD
On C.customer_code = PD.customer_code
Where C.market = 'India' and PD.fiscal_year =2021
Group By C.customer,C.customer_code
Order By Avg_discount_Pct desc Limit 5;
```

Output:




| customer | customer_code | Avg_discount_... |
|---|---|---|
| Flipkart | 90002009 | 0.3083 |
| Viveks | 90002006 | 0.3038 |
| Ezone | 90002003 | 0.3028 |
| Croma | 90002002 | 0.3025 |
| Amazon | 90002016 | 0.2933 |

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

```
Select Concat(MonthName(fm.date),'(',(Year(fm.date)),')') as Month_Date,fm.fiscal_year as Fiscal_Year,
concat(Round(Sum(fg.gross_price*fm.sold_quantity)/1000000,2),'M') as Gross_Sales_Amount_Mln
from fact_gross_price fg
Join fact_sales_monthly fm on
fm.product_code = fg.product_code
Join dim_customer C on
fm.customer_code = C.customer_code
Where  C.customer = 'Atliq Exclusive'
Group By Month_Date,Fiscal_Year
Order By Fiscal_Year;
```

# Output:


| Month_Date | Fiscal_Year | Gross_Sales_Amount_Mln |
|---|---|---|
| September(2019) | 2020 | 9.09M |
| October(2019) | 2020 | 10.38M |
| November(2019) | 2020 | 15.23M |
| December(2019) | 2020 | 9.76M |
| January(2020) | 2020 | 9.58M |
| February(2020) | 2020 | 8.08M |
| March(2020) | 2020 | 0.77M |
| April(2020) | 2020 | 0.80M |
| May(2020) | 2020 | 1.59M |
| June(2020) | 2020 | 3.43M |
| July(2020) | 2020 | 5.15M |
| August(2020) | 2020 | 5.64M |
| September(2020) | 2021 | 19.53M |
| October(2020) | 2021 | 21.02M |
| November(2020) | 2021 | 32.25M |
| December(2020) | 2021 | 20.41M |
| January(2021) | 2021 | 19.57M |
| February(2021) | 2021 | 15.99M |
| March(2021) | 2021 | 19.15M |
| April(2021) | 2021 | 11.48M |
| May(2021) | 2021 | 19.20M |
| June(2021) | 2021 | 15.46M |
| July(2021) | 2021 | 19.04M |
| August(2021) | 2021 | 11.32M |

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

```
Select
 CASE
When date between '2019-09-01' and '2019-11-01' then 'Q1'
When date between '2019-12-01' and '2020-02-01' then 'Q2'
When date between '2020-03-01' and '2020-05-01' then 'Q3'
When date between '2020-06-01' and '2020-08-01' then 'Q4'
END as Quater,
Concat(Round((sum(sold_quantity)/1000000),4),'M')as Total_Sold_qty,Month(date) as
Month_date,fiscal_year as Fiscal_year from fact_sales_monthly
where fiscal_year = 2020
group by Quater
order by Total_Sold_qty desc;
```

## Output:

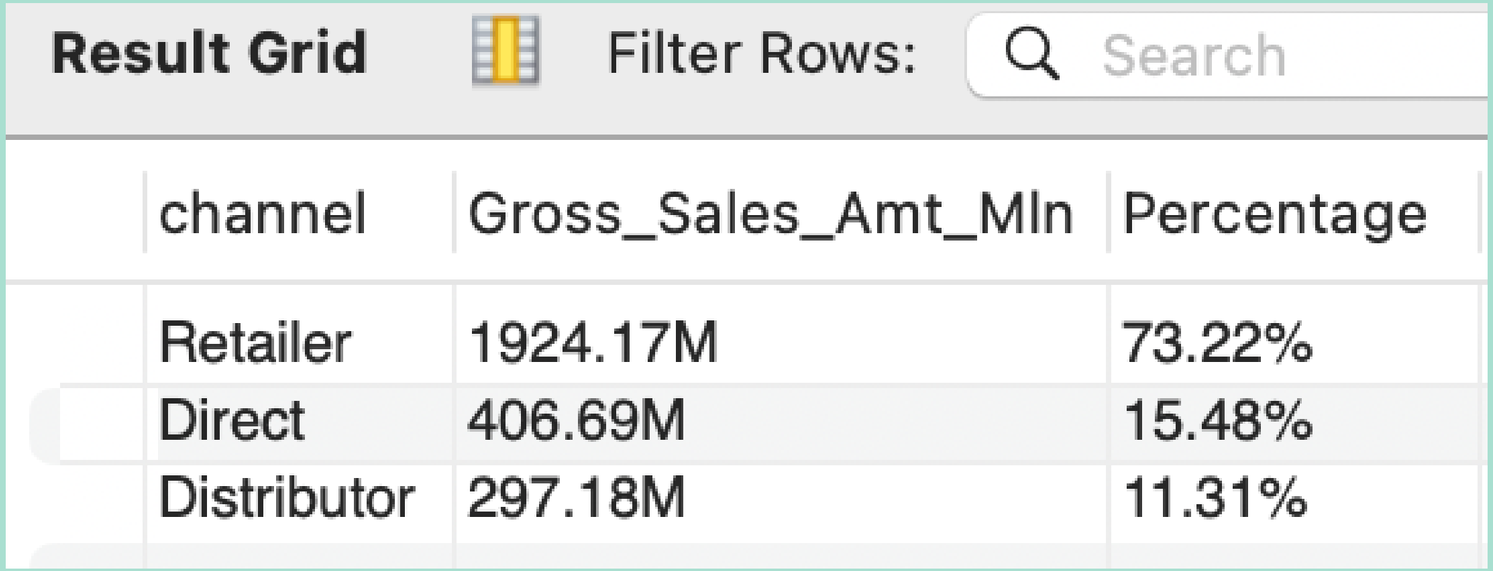
**Result Grid**   Filter Rows: Search

| Quater | Total_Sold_qty | Month_date | Fiscal_year |
|---|---|---|---|
| Q1 | 7.0056M | 9 | 2020 |
| Q2 | 6.6496M | 12 | 2020 |
| Q4 | 5.0425M | 6 | 2020 |
| Q3 | 2.0751M | 3 | 2020 |

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

```
With Gross_Table as (
Select
C.channel,
Round(SUM(fm.sold_quantity*fg.gross_price )/1000000,2) as
Gross_Sales_Amt_Mln
from fact_sales_monthly fm
Join fact_gross_price fg on
fg.product_code = fm.product_code
Join dim_customer C on
C.customer_code = fm.customer_code
Where fm.fiscal_year =2021
Group By C.channel
Order By Gross_Sales_Amt_Mln Desc)
Select channel,concat(Gross_Sales_Amt_Mln,'M')  As Gross_Sales_Amt_Mln,
Concat(Round(Gross_Sales_Amt_Mln*100 /Sum(Gross_Sales_Amt_Mln)
Over(),2),'%')as Percentage
From Gross_Table;
```

## Output:




| channel | Gross_Sales_Amt_Mln | Percentage |
|---|---|---|
| Retailer | 1924.17M | 73.22% |
| Direct | 406.69M | 15.48% |
| Distributor | 297.18M | 11.31% |

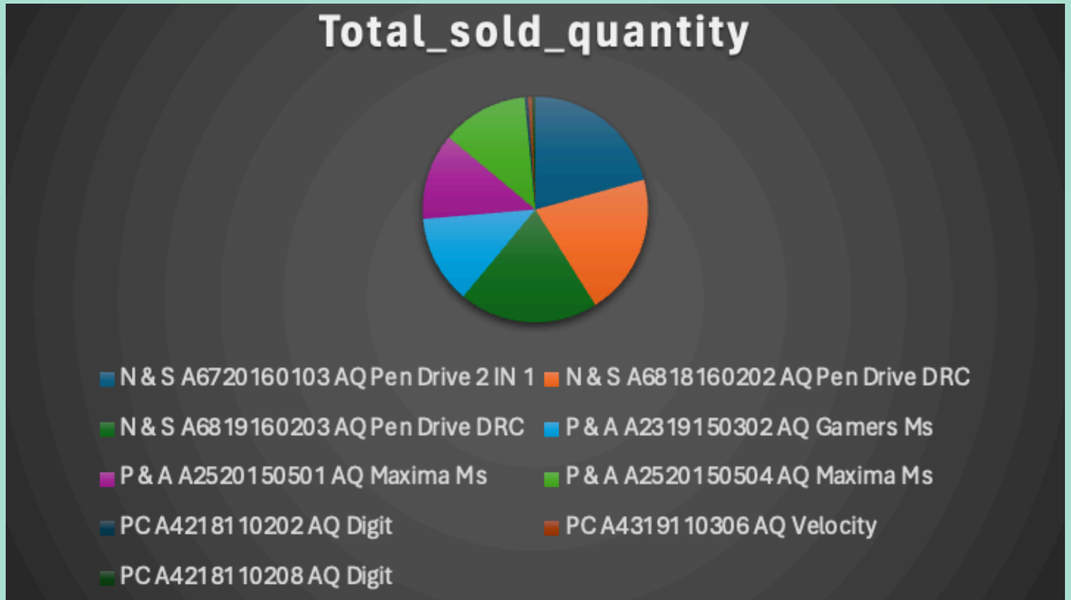
10. Get the Top 3 products in each division that have a high total_sold_quantity in the fiscal_year 2021? The final output contains these fields,
division ,product_code ,product ,total_sold_quantity ,rank_order

```
With Temp_Table1 as
(Select P.division,P.product_code ,P.product,Sum(fm.sold_quantity) as Total_Sold_Qty
from dim_product P
Join fact_sales_monthly fm on
P.product_code = fm.product_code
Where fm.fiscal_year =2021
Group By P.product_code,P.division,P.product),
Temp_Table2 as(
Select division,product_code,product,Total_Sold_Qty,
dense_rank() over(Partition by division order by Total_Sold_Qty desc) as dnrk
from Temp_Table1)
Select T1.division,T1.product_code,T1.product,T2.Total_Sold_Qty,T2.dnrk as Ranked_Order
From Temp_Table1 T1 Join Temp_Table2 T2 On
T1.product_code = T2.product_code
Where T2.dnrk <=3 ;
```

# Output:

Result Grid  Filter Rows: Search  Export:

| division | product_code | product | Total_Sold_Q... | Ranked_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 |



# Thank You

Presented by Ramya Karthikeyan