



# Consumer Goods

Ad\_Hoc Insights

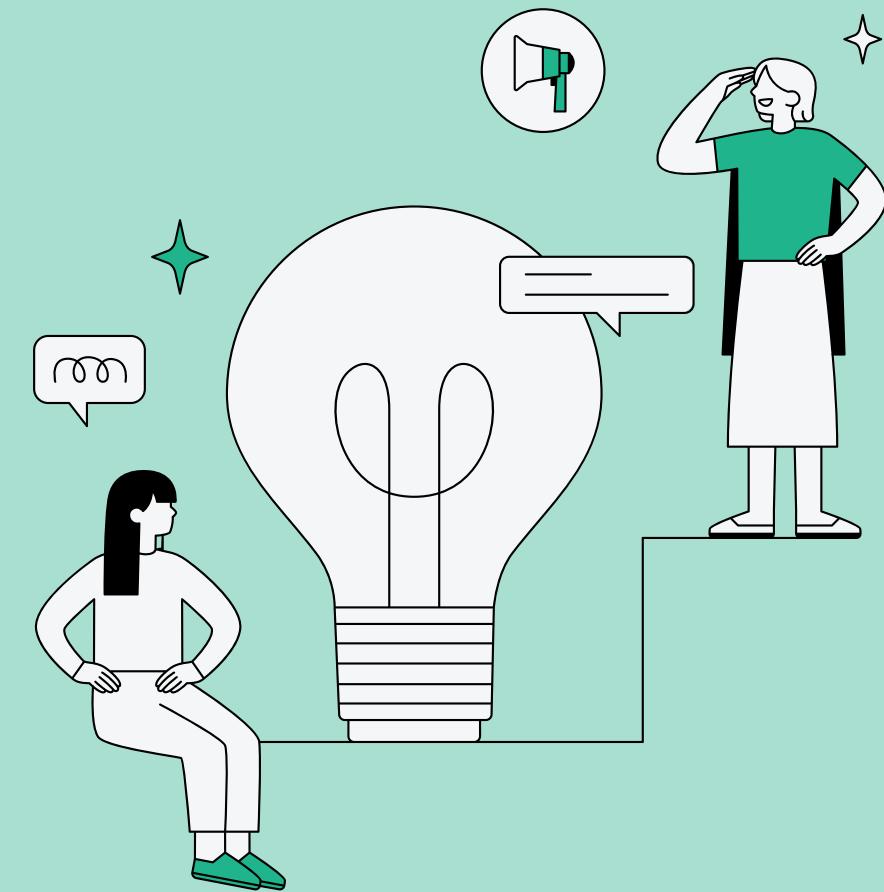
SQL Project Challenge

Presented by Ramya Karthikeyan

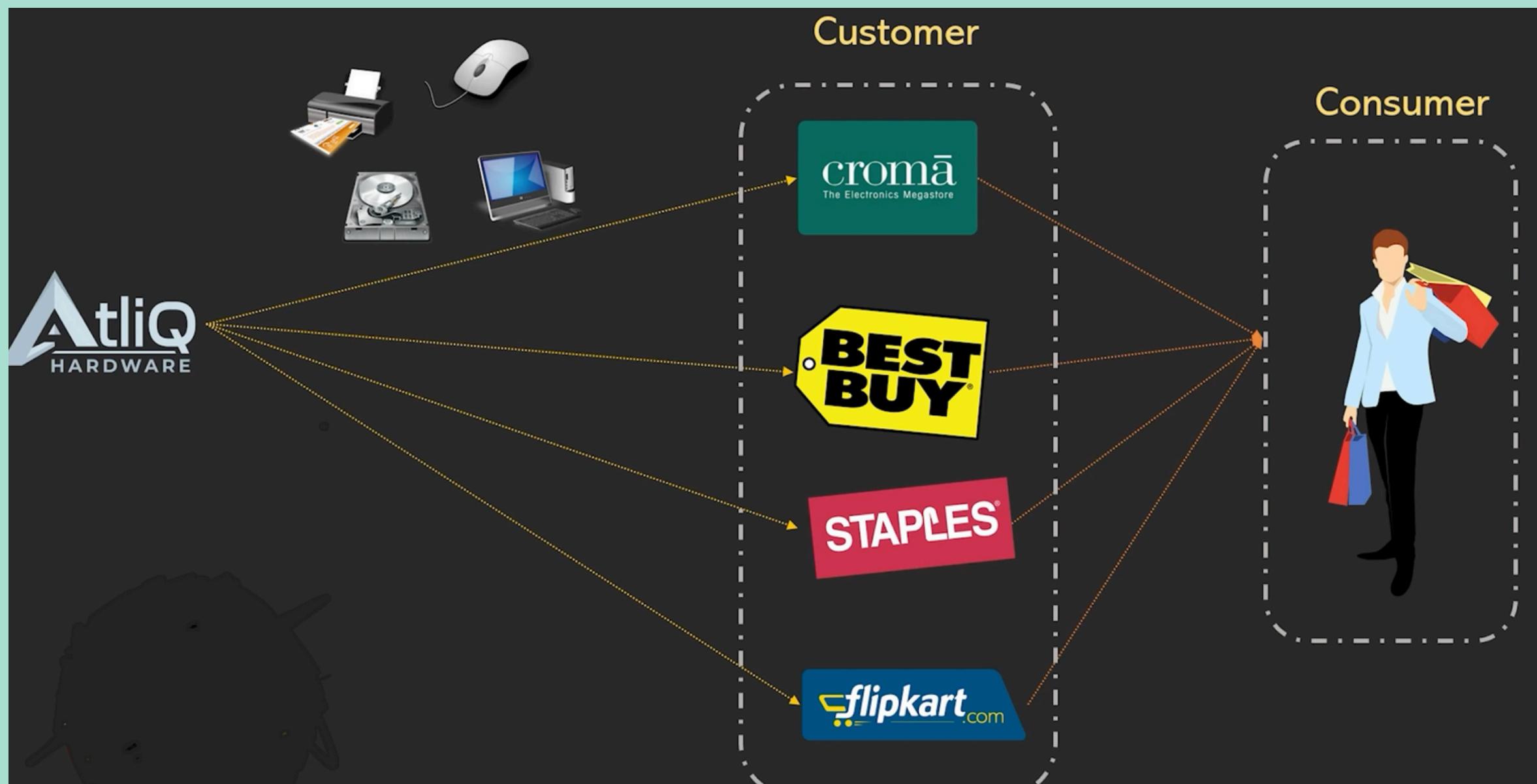


# Introduction

- 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" operates its business in the APAC region.

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

Output:

Market
India
Indonesia
Japan
Philippines
South Korea
Australia
Newzealand
Bangladesh



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)

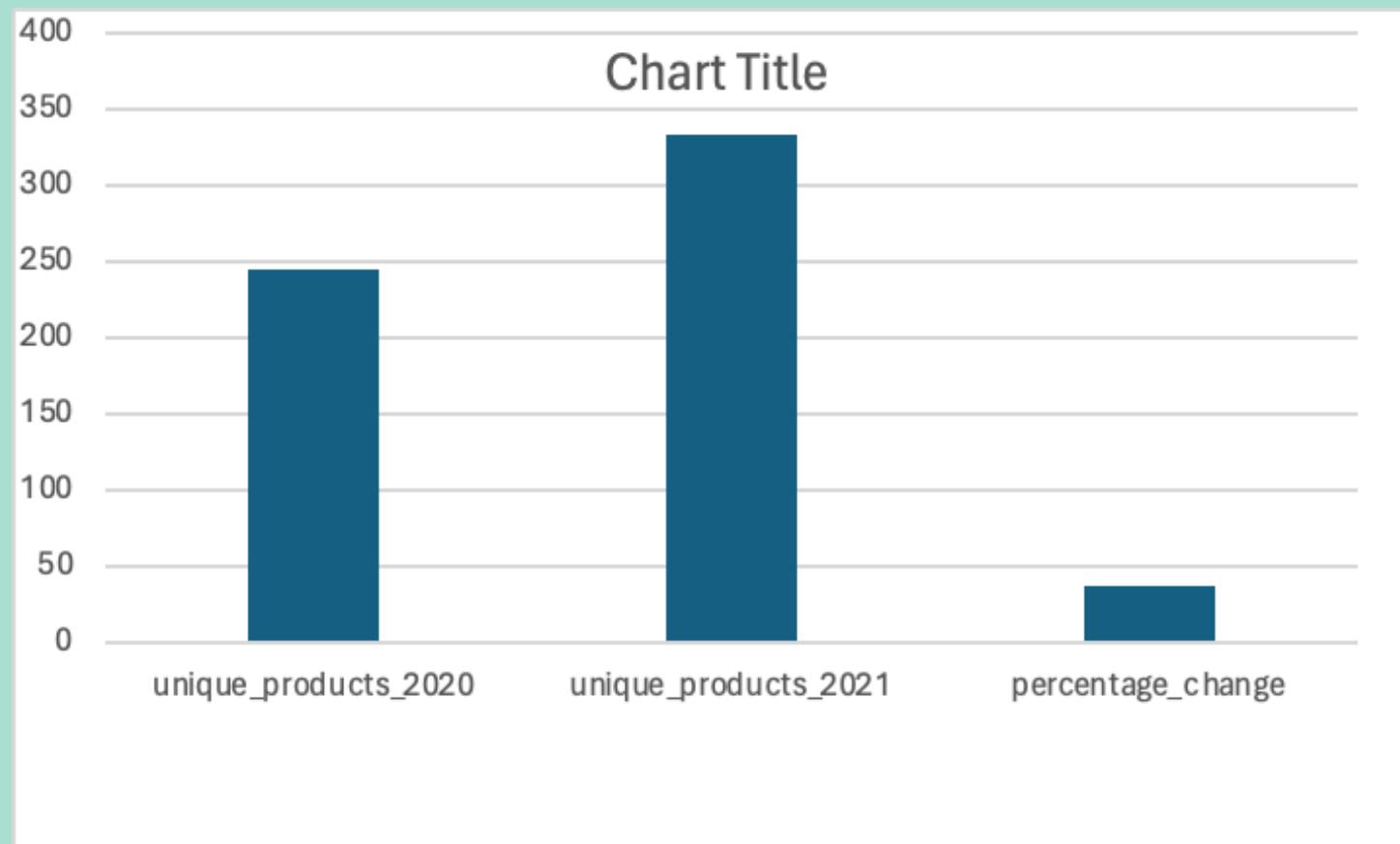
Select

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_change
	245	334	36.33



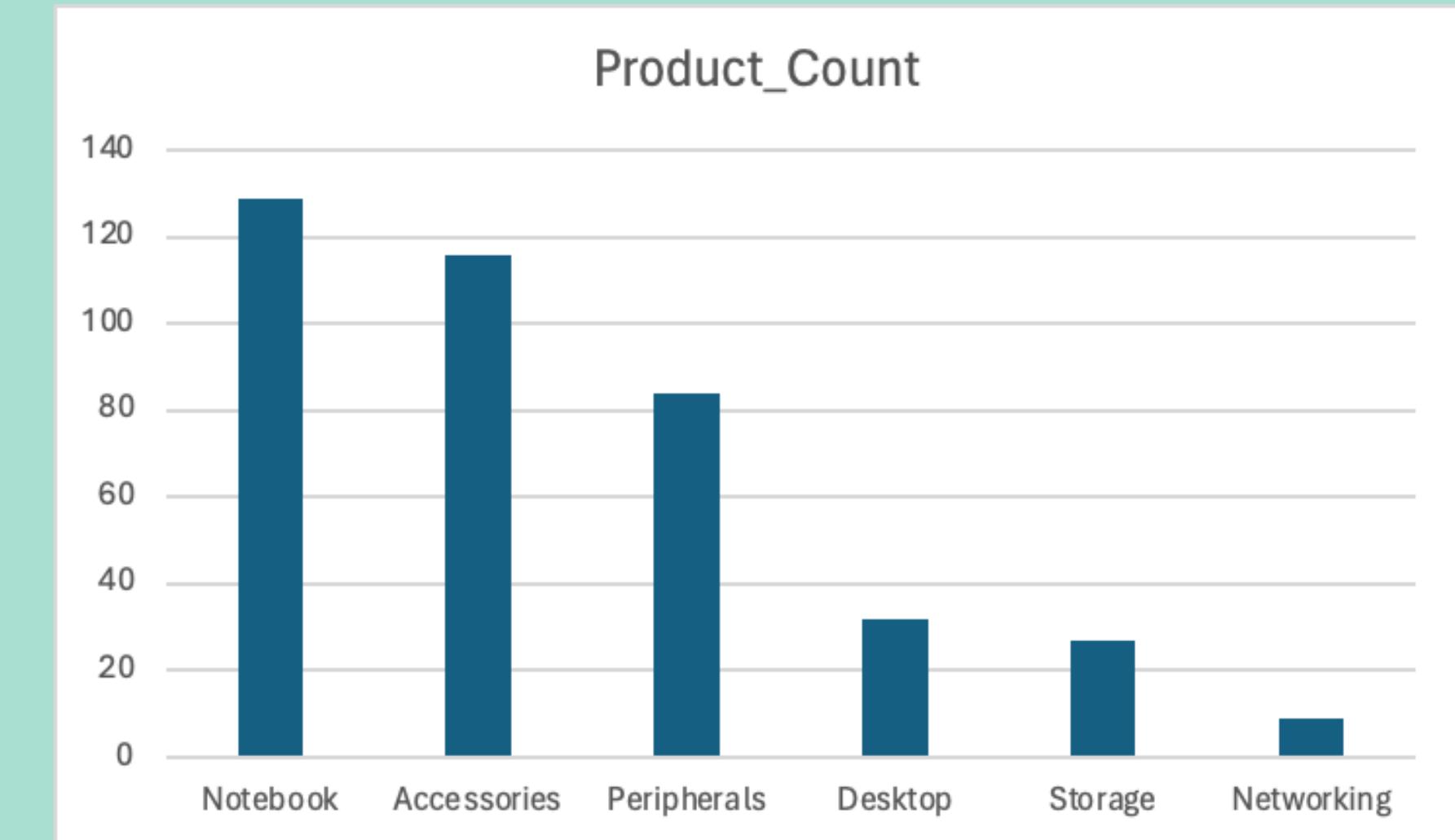
3. Provide a report with all the unique product counts for each segment and sort them in descending order of product counts. The final output contains 2 fields, segment, product\_count

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

## Output:

**Result Grid** Filter Row

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:

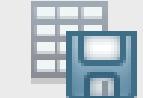
**Result Grid**

Filter Rows:

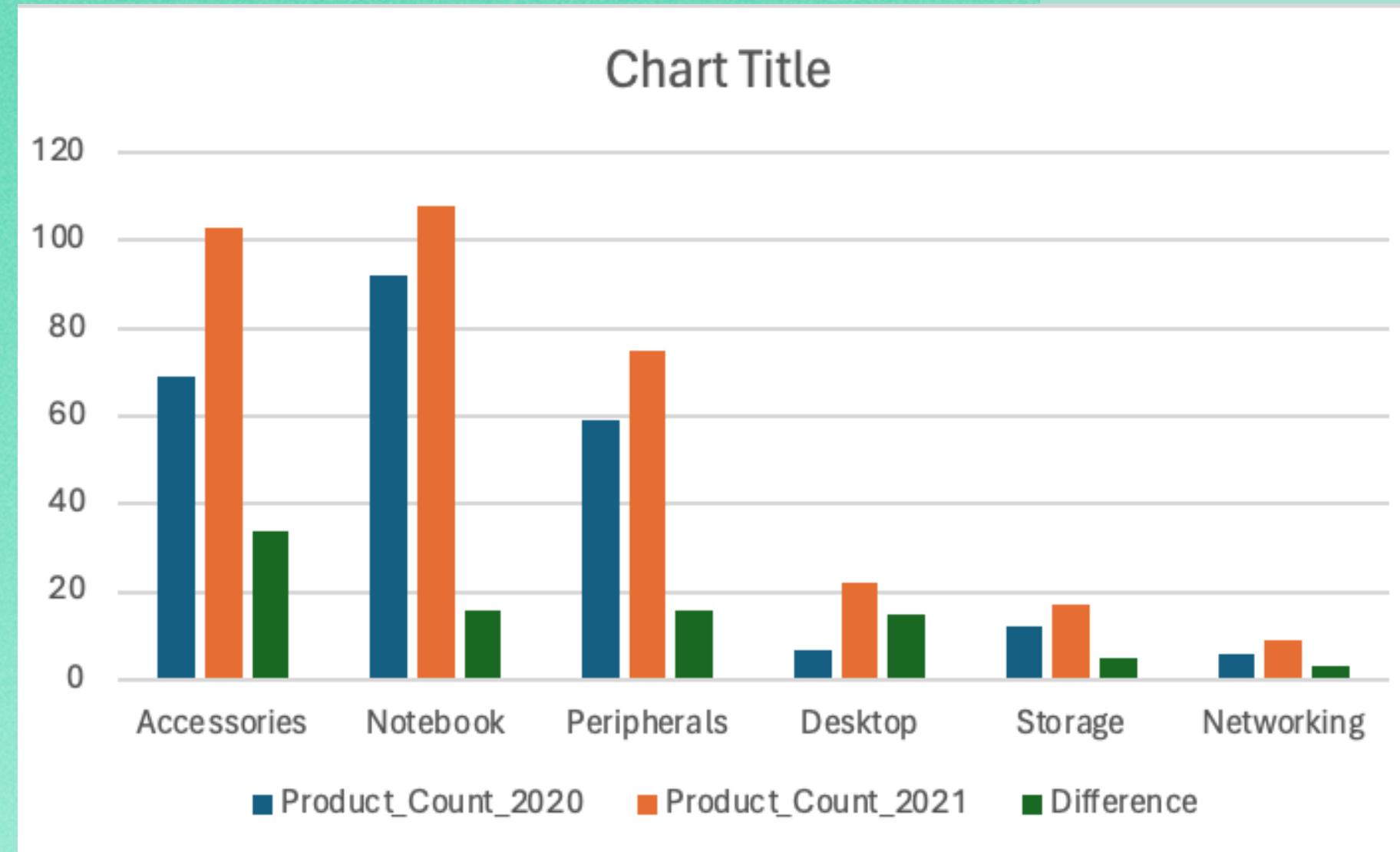


Search

Export:



segment	Product_Count_2020	Product_Count_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



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:

Result Grid   Filter Rows:  

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:

**Result Grid**  Filter Rows:  Search

	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

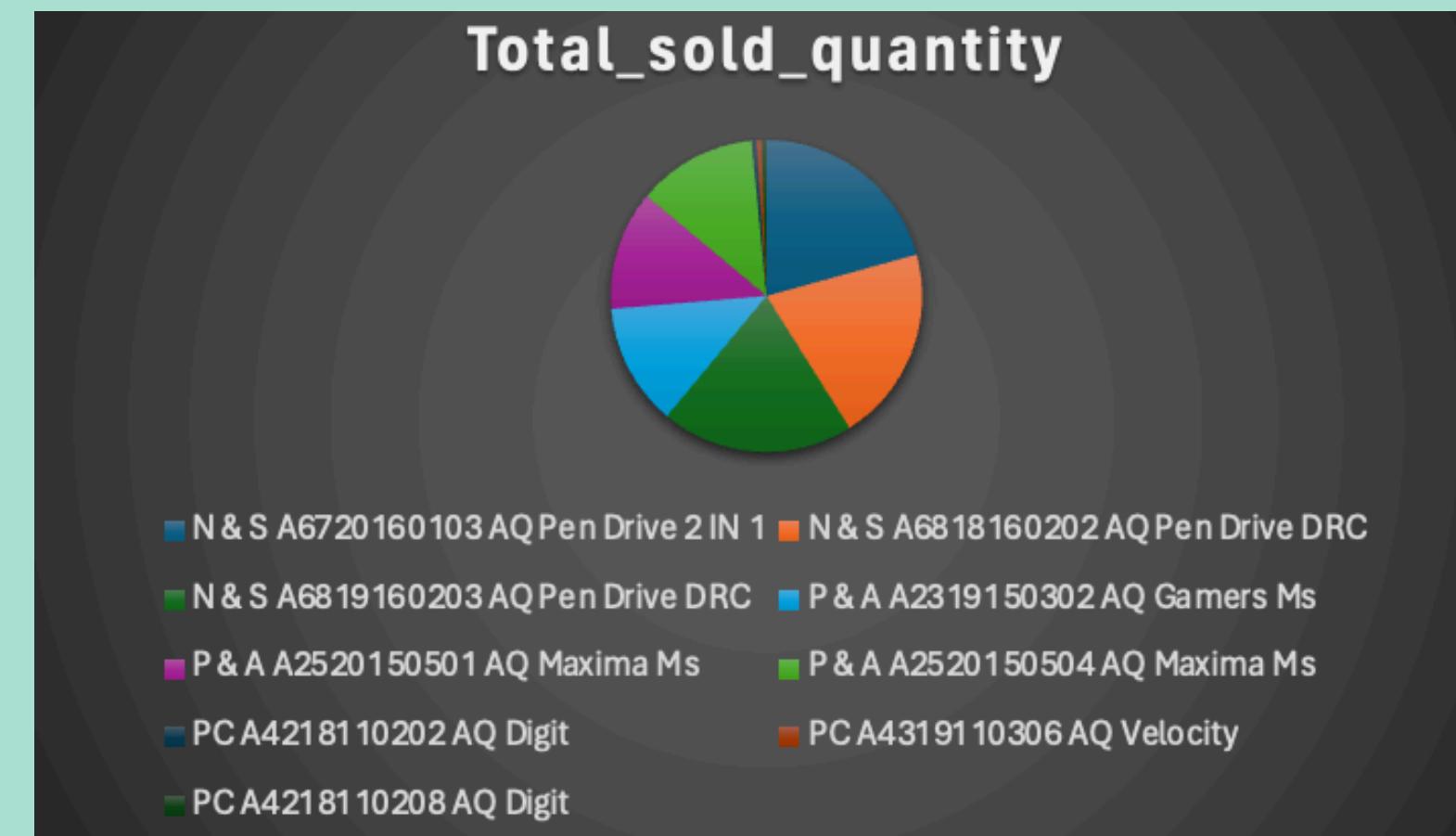
```
T1.product_code = T2.product_code
```

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