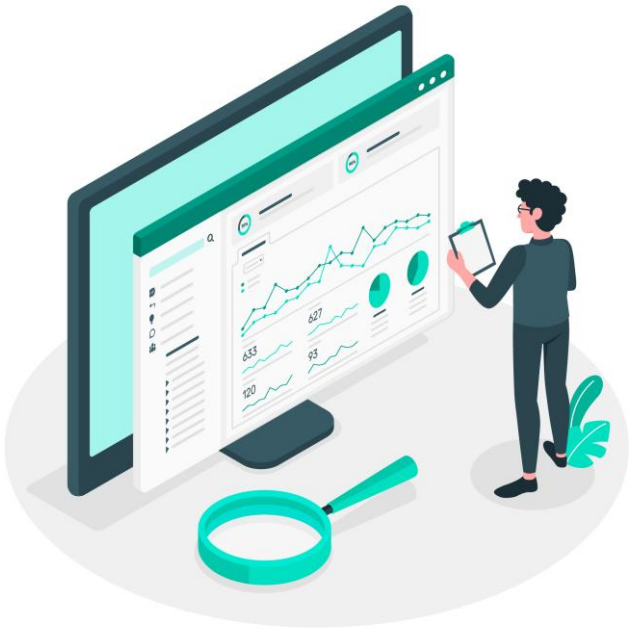


AtliQ Hardware

Consumer Goods Ad-hoc Insights

Presented by **Mohammed IZHAR**

Content

1. Company Overview
2. About and Problem Statement
3. Company’s Business Model
4. Product line
5. Ad-hoc reuests, outputs and insights

About Company and Problem Statement

About AtliQ Hardware and Background

AtliQ Hardware, a leading hardware company specializing in PCs, printers, mice, and computers with a global reach.

However, the management noticed that they do not get enough insights to make quick and smart data-informed decisions. They want to expand their data analytics team by adding several junior data analysts. Tony Sharma, their data analytics director wanted to hire someone who is good at both tech and soft skills. Hence, he decided to conduct a SQL challenge which will help him understand both the skills.

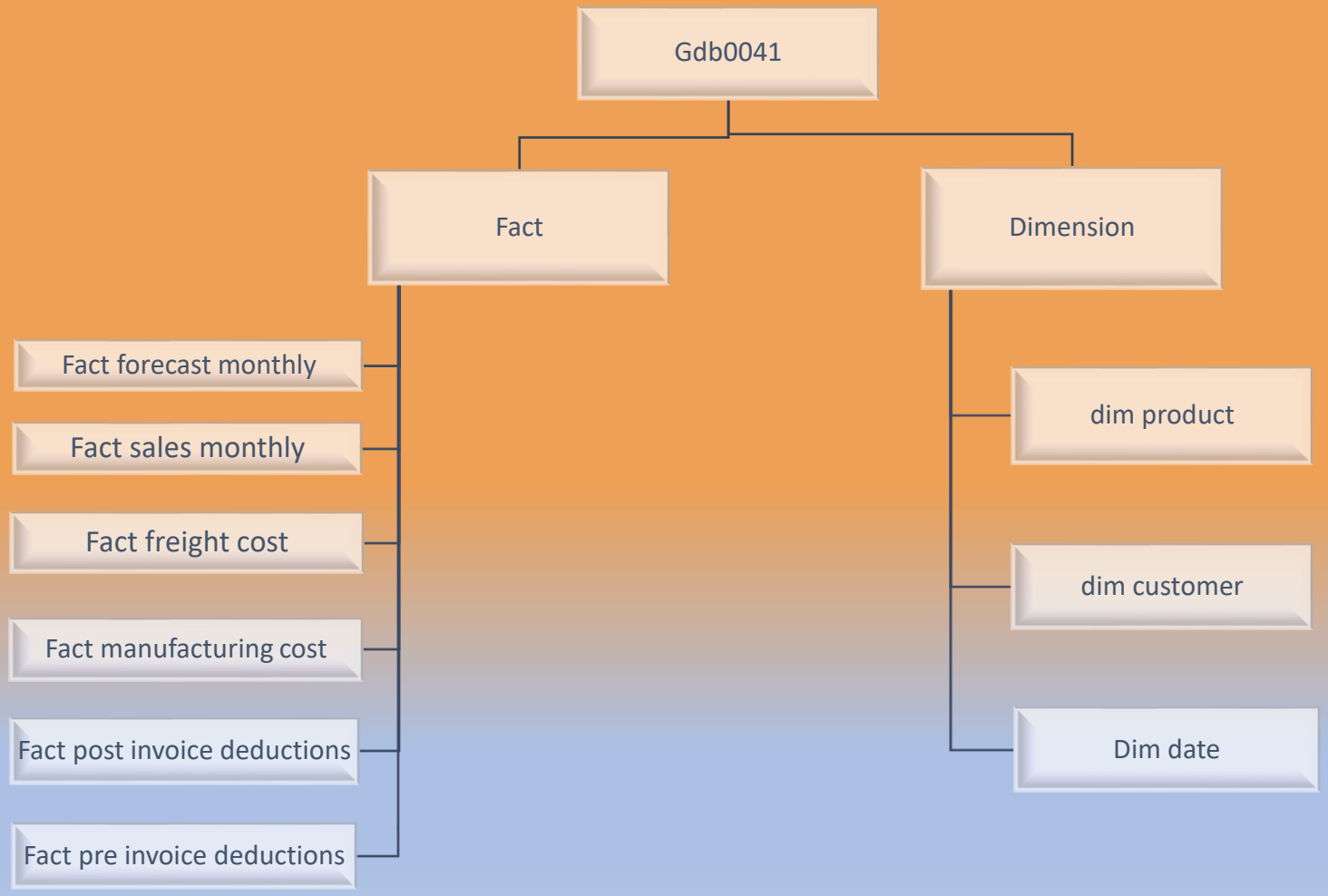
Problem and Approach

There are 10 Ad-hoc requests for which the company need insights and we have to run efficient SQL queries to answer these requests, convert it into visualizations and present them to the top management.

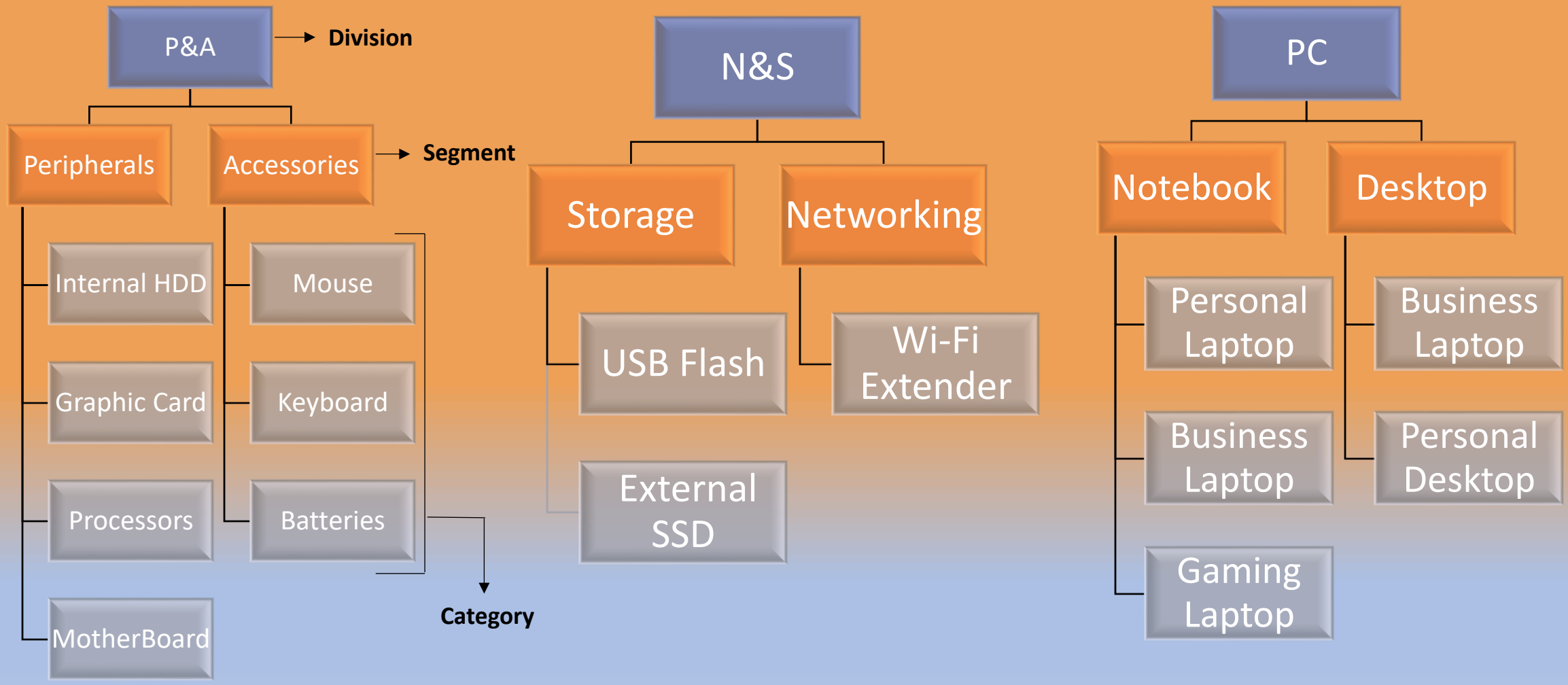
Fiscal Year

The Fiscal Year for AtliQ Hardware is from September to August.

DATA SETS


Gdb0041
Fact
Dimension
Fact forecast monthly
Fact sales monthly
Fact freight cost
Fact manufacturing cost
Fact post invoice deductions
Fact pre invoice deductions
dim product
dim customer
Dim date

Product Hierarchy



5

Ad-hoc
requests,
queried results,
Insights and
Visualization

Request 1:

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

OUTPUT

market
India
Indonesia
Japan
Philiphines
South Korea
Australia
Newzealand
Bangladesh

Note : In the above query get_fy is a User defined Function

Query:

```
SELECT distinct(market)
FROM dim_customer
where region = "APAC"
and
customer = "Atliq Exclusive"
```

Insights

In **APAC** region, **Atliq Exclusive** has established its presence in **8** markets.

Request 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,
pct_change.

OUTPUT

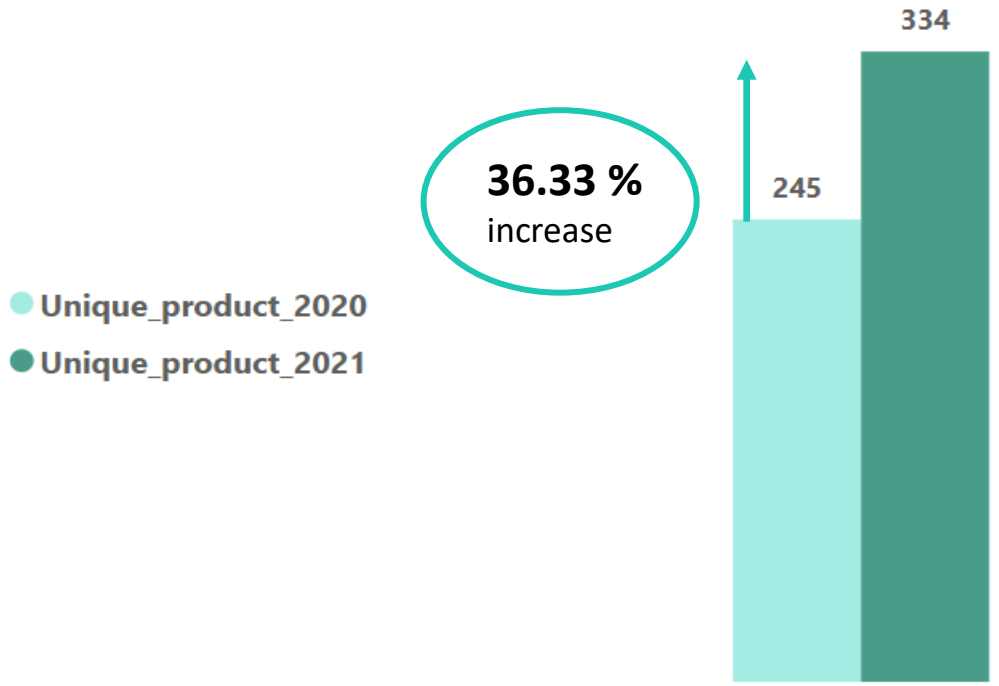
unique_product_2020	unique_product_2021	pct_change
245	334	36.33

Query:

```
with unq_20 as(
SELECT
count(distinct product_code) as unique_product_2020
from fact_sales_monthly
where fiscal_year = 2020),

unq_21 as(
SELECT
count(distinct product_code) as unique_product_2021
from fact_sales_monthly
where fiscal_year = 2021)

select
unique_product_2020,
unique_product_2021,
round((unique_product_2021-
unique_product_2020)*100/(unique_product_2020),2)
as pct_change
from unq_20
join unq_21
```

Insights

In **FY 2020**, AtliQ Hardware had a total of **245** products, but in **FY 2021**, count increased by **36**% to **334** products.



Request 3:

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.

Query:

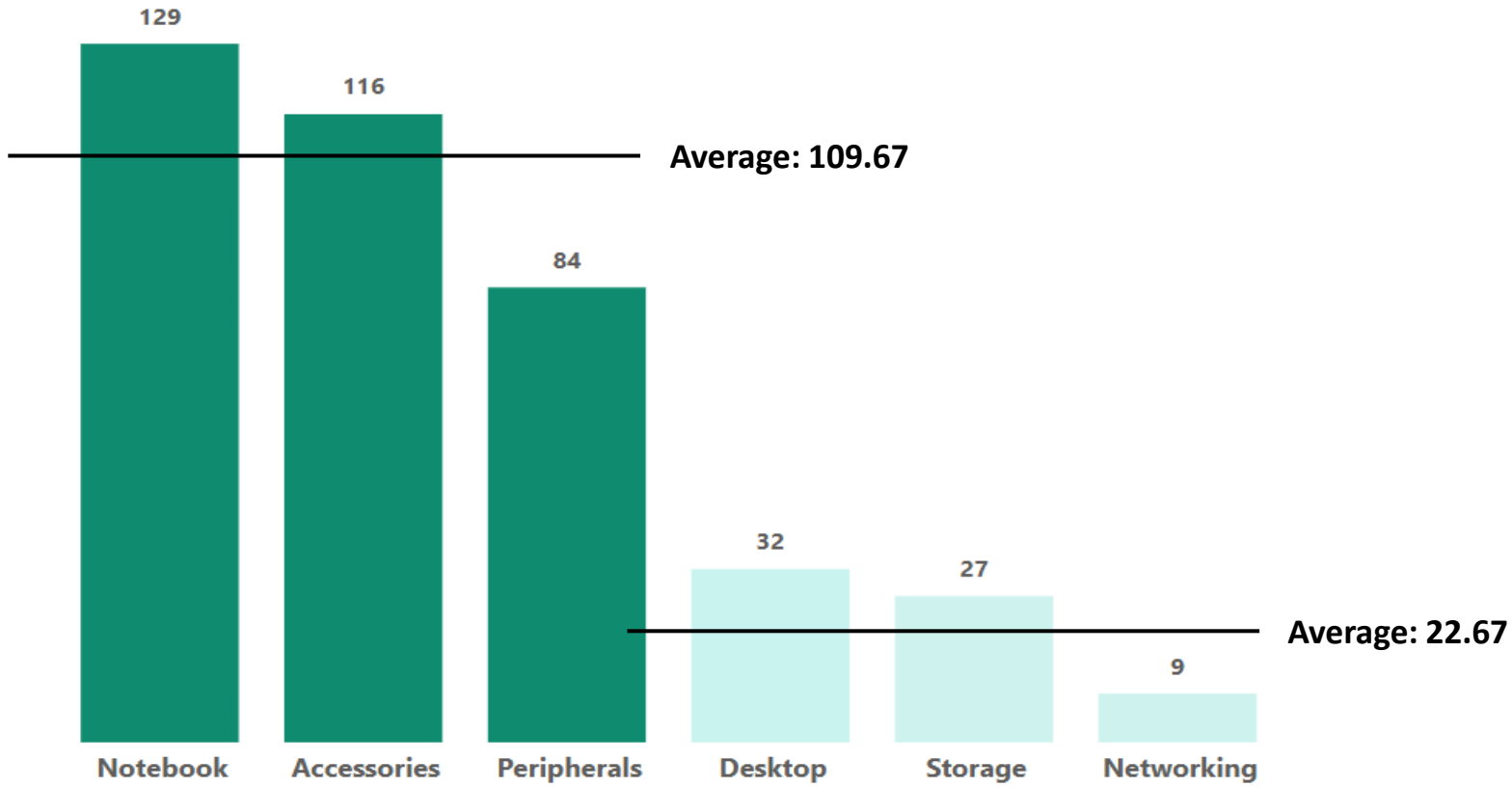
```
SELECT
segment,
count(distinct product_code)
as product_count
FROM dim_product
group by segment
order by product_count desc
```

OUTPUT

segment	product_count
Notebook	129
Accessories	116
Peripherals	84
Desktop	32
Storage	27
Networking	9

Insights

AtliQ Hardware provide a wide range of products under segments **Notebook**, **Accessories** and **Peripherals**, with an average around **109 produts in each segment**.
Howerver still need to diversify production in segments like **Desktop**, **Networking** and **Storage** which has an average of only **23 products per segment**.



Request 4:

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

OUTPUT

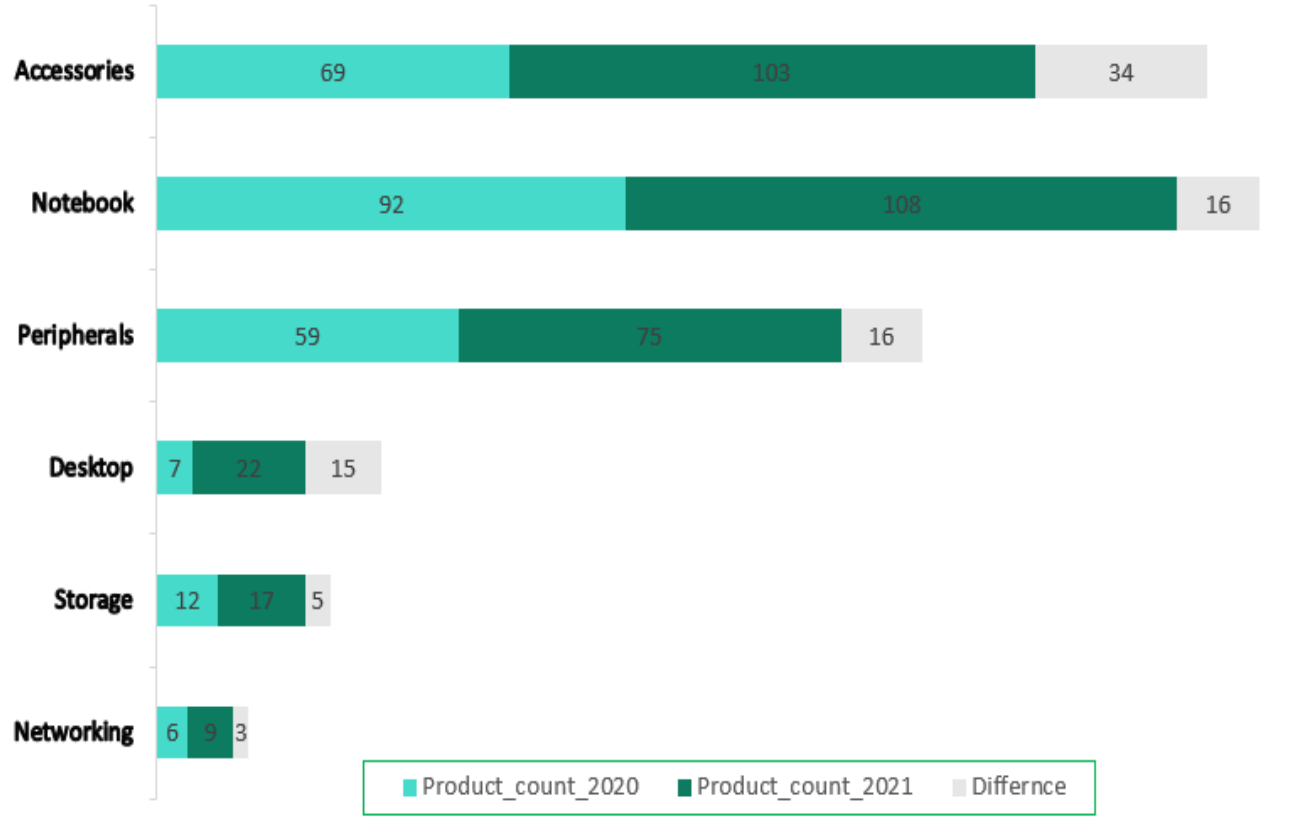
Segment	product_count_2020	product_count_2021	differnce
Accessories	69	103	34
Notebook	92	108	16
Peripherals	59	75	16
Desktop	7	22	15
Storage	12	17	5
Networking	6	9	3

Query:

```
with count_2020 as (
SELECT s.fiscal_year, p.segment,
count(distinct p.product_code) as product_count_2020
FROM gdb023.dim_product p
join fact_sales_monthly s
on p.product_code = s.product_code
where s.fiscal_year = 2020
group by segment
order by product_count_2020 desc),

count_2021 as (
SELECT s.fiscal_year, p.segment,
count(distinct p.product_code) as product_count_2021
FROM gdb023.dim_product p
join fact_sales_monthly s
on p.product_code = s.product_code
where s.fiscal_year = 2021
group by segment
order by product_count_2021 desc)

select
C20.segment as Segment,
product_count_2020,
product_count_2021,
(product_count_2021-product_count_2020) as differnce
from count_2020 as C20
join count_2021 as C21
on C20.segment = C21.segment
order by differnce desc
```

Insights

In 2021, AtliQ Hardware introduced **34 new products** to the market in accessories segment.



Request 5:

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

OUTPUT

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

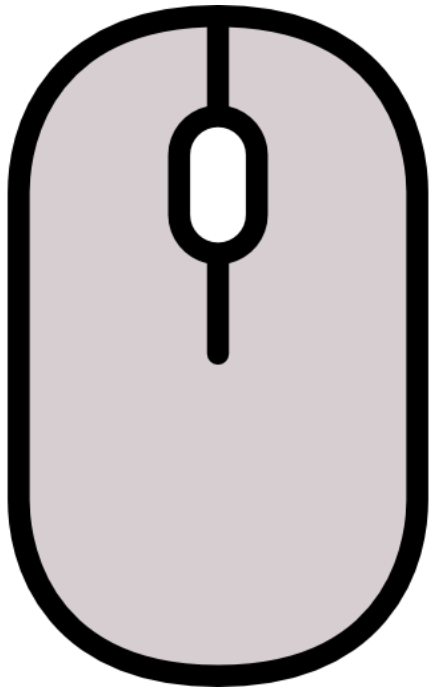
Query:

```
(SELECT
p.product_code, p.product,
m.manufacturing_cost
FROM dim_product p
join fact_manufacturing_cost m
on p.product_code = m.product_code
order by manufacturing_cost desc
limit 1)

Union

(SELECT
p.product_code, p.product,
m.manufacturing_cost
FROM dim_product p
join fact_manufacturing_cost m
on p.product_code = m.product_code
order by manufacturing_cost asc
limit 1)
```

Insights

The Highest and Lowest manufacturing cost products for AtliQ hardware are **AQ Home Allin Gen 2 (plus 3) (Personal Desktop)** and **AQ Master Wired x1 Ms (Standard 1) (Mouse)** with **costs of 240.53$** and **0.89$** respectively.

AQ Home Allin Gen 2 (plus 3)
Personal Desktop



AQ Master Wired x1 Ms (Standard 1)
Mouse

Request 6:

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

OUTPUT

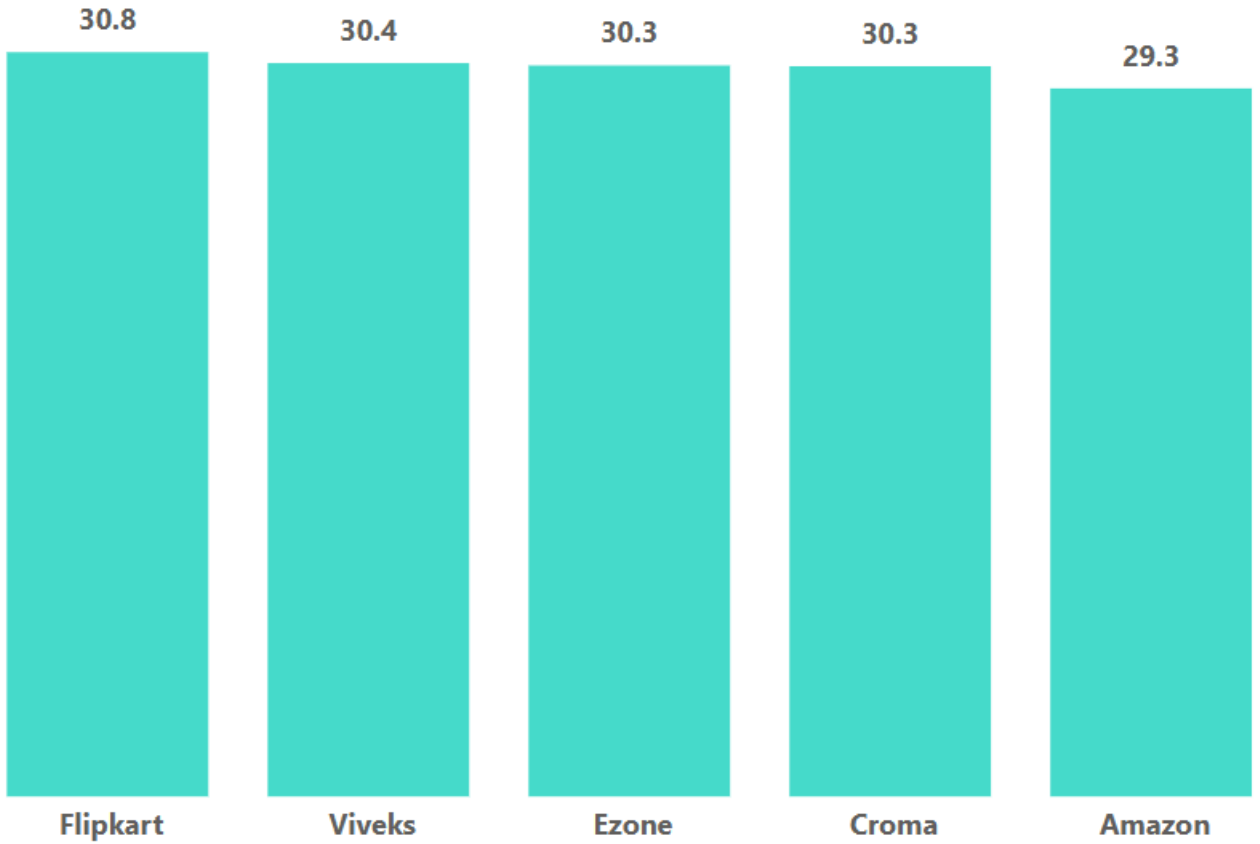
customer_code	customer	avg_discount_pct
90002009	Flipkart	30.83
90002006	Viveks	30.38
90002003	Ezone	30.28
90002002	Croma	30.25
90002016	Amazon	29.33

Query:

```
SELECT
c.customer_code,
c.customer,
round(avg(pre.pre_invoice_discount_pct*100),2)
as avg_discount_pct
FROM dim_customer c
join fact_pre_invoice_deductions pre
on c.customer_code = pre.customer_code
where pre.fiscal_year = 2021 and c.market = "India"
group by c.customer_code, customer
order by avg_discount_pct desc
limit 5;
```

Insights

In 2021, **AtliQ Hardware** offered nearly offered same pre-invoice discount to each of **top 5 customers**, given that **Flipkart** is the most discounted customer in the Indian market with around **31%**.



Request 7:

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

OUTPUT

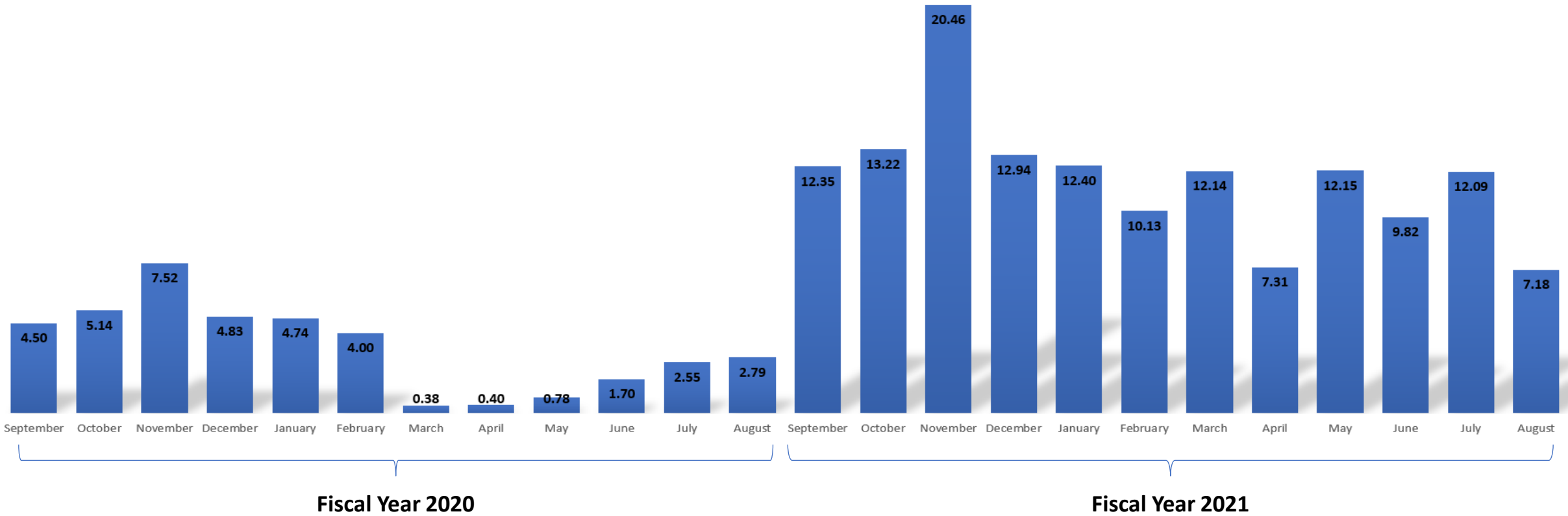
month	fiscal_year	Gross_sales_amount
September	2020	4.50M
October	2020	5.14M
November	2020	7.52M
December	2020	4.83M
January	2020	4.74M
February	2020	4.00M
March	2020	0.38M
April	2020	0.40M
May	2020	0.78M
June	2020	1.70M
July	2020	2.55M
August	2020	2.79M
September	2021	12.35M
October	2021	13.22M
November	2021	20.46M
December	2021	12.94M
January	2021	12.40M
February	2021	10.13M
March	2021	12.14M
April	2021	7.31M
May	2021	12.15M
June	2021	9.82M
July	2021	12.09M
August	2021	7.18M

Query:

```
select
month,
fiscal_year,
Gross_sales_amount

 FROM
(SELECT
monthname(s.date) as month,
month(date_add(s.date, interval 4 month)) as
month_number,
s.fiscal_year,
concat(round(sum(g.gross_price*s.sold_quantity)/1000000
,2),"M") 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 customer = "Atliq Exclusive"
group by month,fiscal_year
order by  fiscal_year, month_number) Gross_sales_Atliq
```

Insights

For AtliQ Hardware, March 2020 marked the lowest gross sales. It is very evident that the lower gross sales between March to August are beacuse of **COVID-19**. However it is very good sign that the **gross sales increased quickly after August** and reached the highest value since the last two years in **November**.



Request 8:

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

OUTPUT

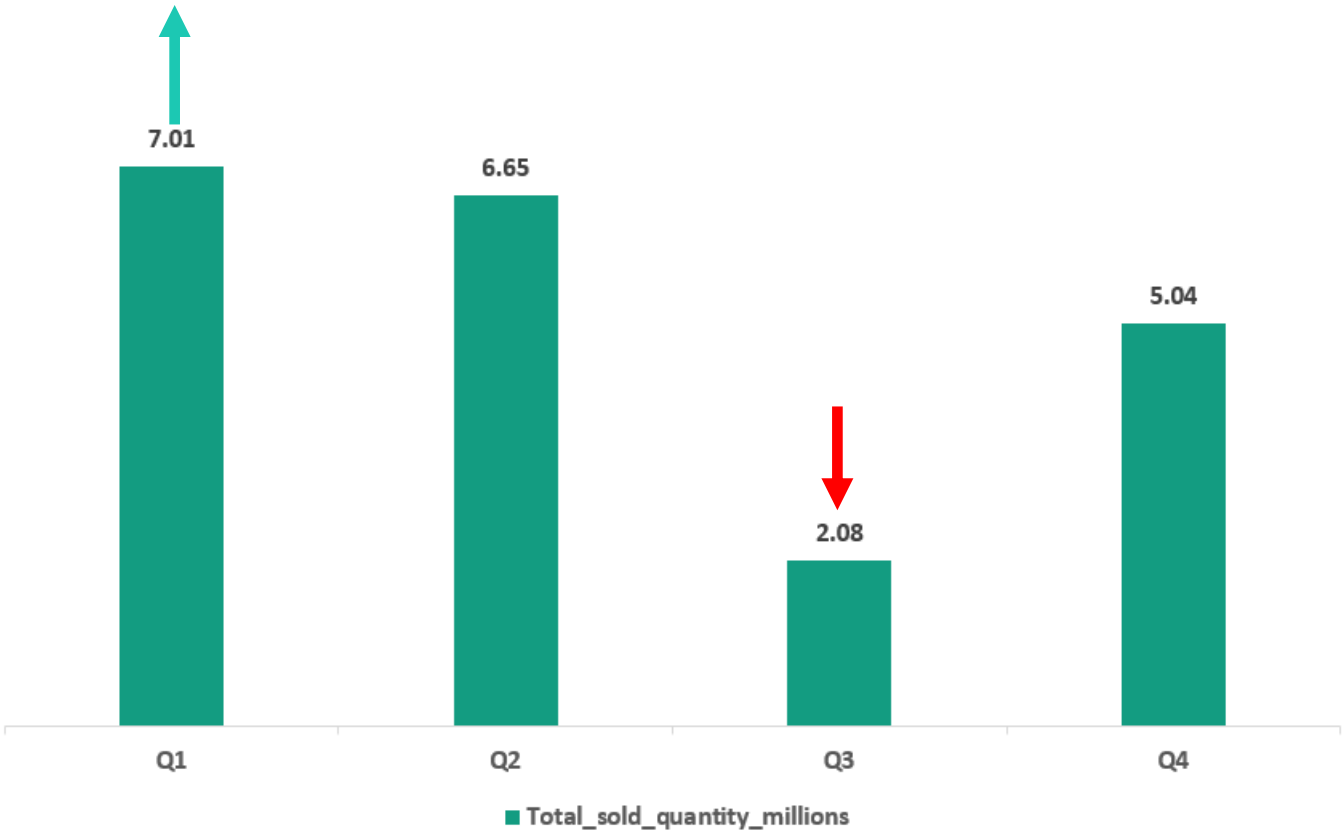
quaters	total_sold_quantity_mln
Q1	7.01
Q2	6.65
Q3	2.08
Q4	5.04

Query:

```
with cte as(
SELECT
quaters(date) as quaters,
fiscal_year,
sum(sold_quantity) as total_sold_quantity
FROM
fact_sales_monthly
where fiscal_year = 2020
group by  quaters)

select
quaters,
round((total_sold_quantity/1000000),2)
as total_sold_quantity_mln
from cte
```

Insights

From the previous insight, we observed that **the gross sales amount** was lowest during March, April, and May due to the impact of **COVID-19**. The visual below confirms this trend, showing that **Q3** which includes these months also recorded the lowest total quantity sold.



Request 9:

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

OUTPUT

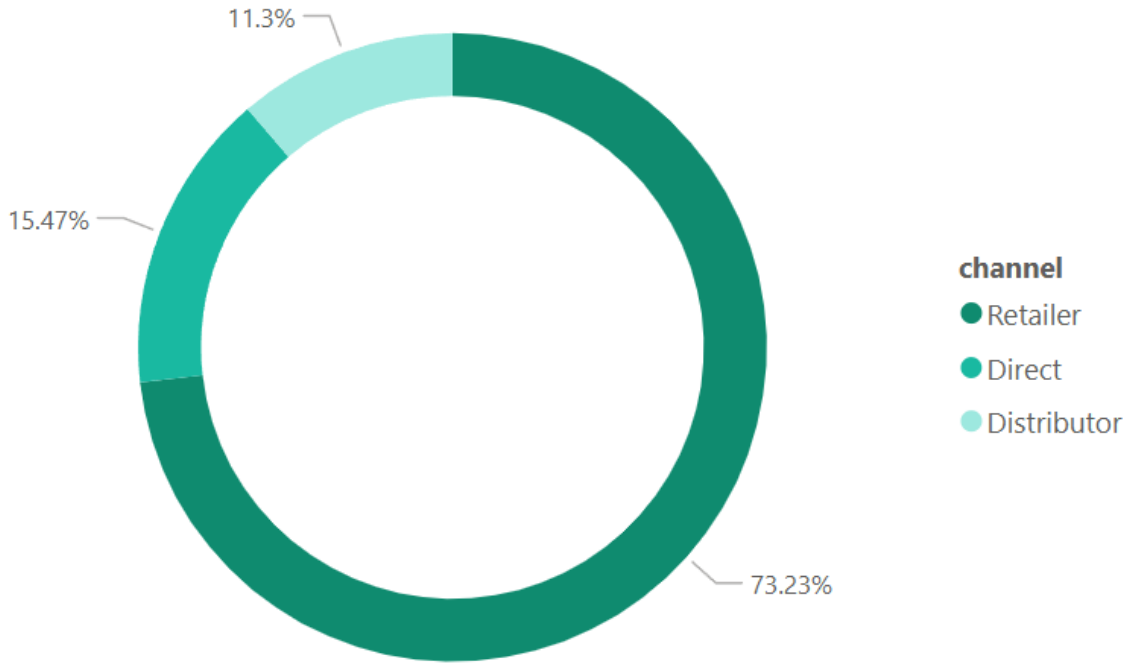
channel	gross_sales_mln	pct
Retailer	1219.08	73.23
Direct	257.53	15.47
Distributor	188.03	11.30

Query:

```
with X as(
SELECT
c.channel,
Round
(sum((s.sold_quantity*g.gross_price)/(1000000)),2)
as gross_sales_mln
FROM fact_sales_monthly s
join dim_customer c
on c.customer_code = s.customer_code
join fact_gross_price g
on g.product_code = s.product_code
where s.fiscal_year = 2021 and g.fiscal_year =
s.fiscal_year
group by c.channel)

select *,
round((gross_sales_mln)*100/sum(gross_sales_mln)
over(),2)  as pct
from X
order by gross_sales_mln desc
```

Insights

The sales majorly happened through **retailers,** which is **73.23 %** of the total sales**.**



Request 10:

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

OUTPUT

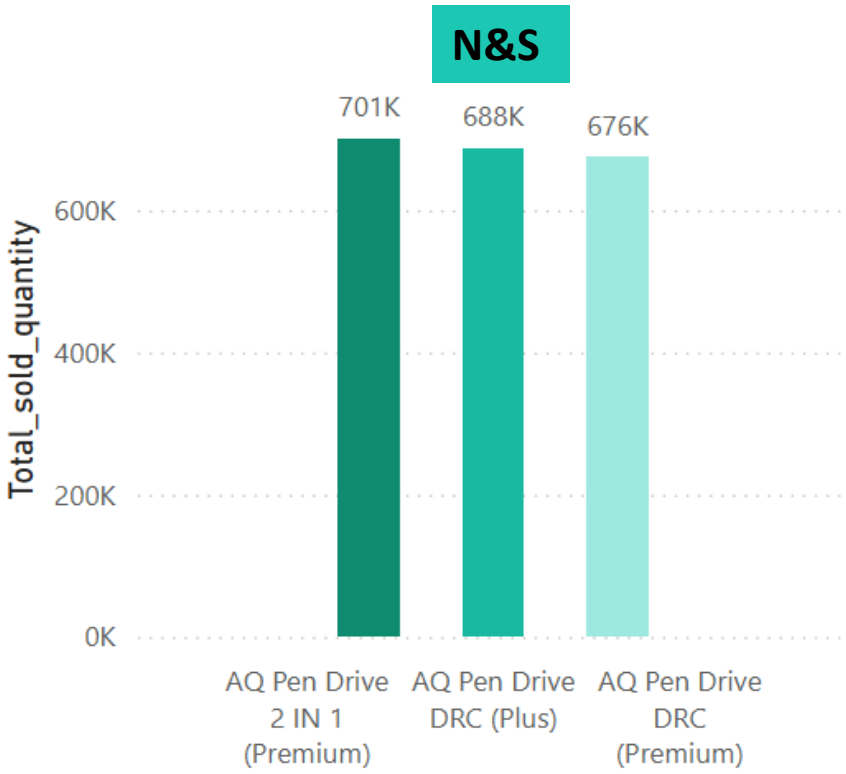
division	product_code	product	variant	total_sold_quantity	rnk_order
N & S	A6720160103	AQ Pen Drive 2 IN 1	Premium	701373	1
N & S	A6818160202	AQ Pen Drive DRC	Plus	688003	2
N & S	A6819160203	AQ Pen Drive DRC	Premium	676245	3
P & A	A2319150302	AQ Gamers Ms	Standard 2	428498	1
P & A	A2520150501	AQ Maxima Ms	Standard 1	419865	2
P & A	A2520150504	AQ Maxima Ms	Plus 2	419471	3
PC	A4218110202	AQ Digit	Standard Blue	17434	1
PC	A4319110306	AQ Velocity	Plus Red	17280	2
PC	A4218110208	AQ Digit	Premium Misty Green	17275	3

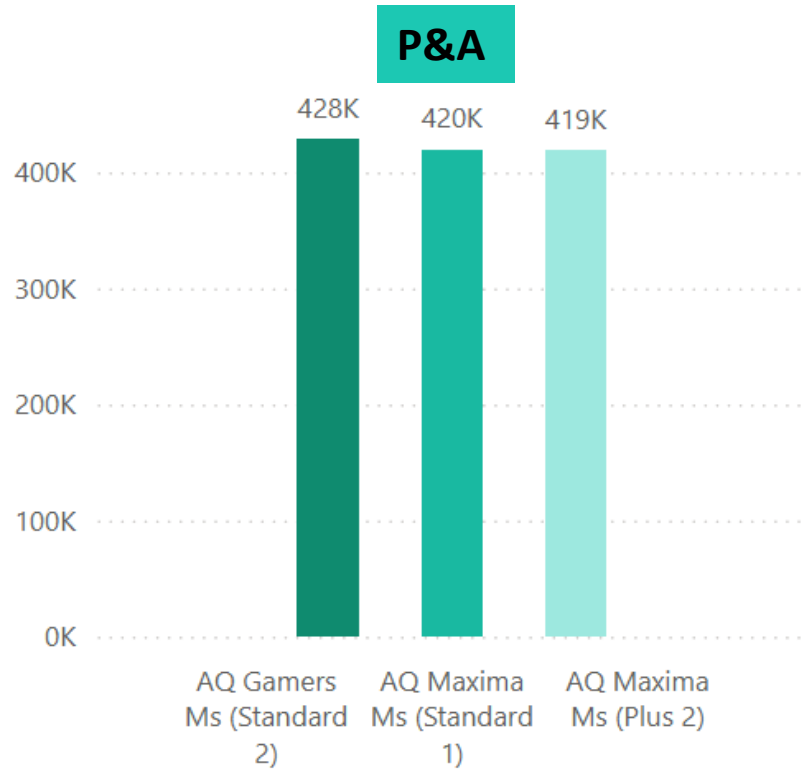
Query:

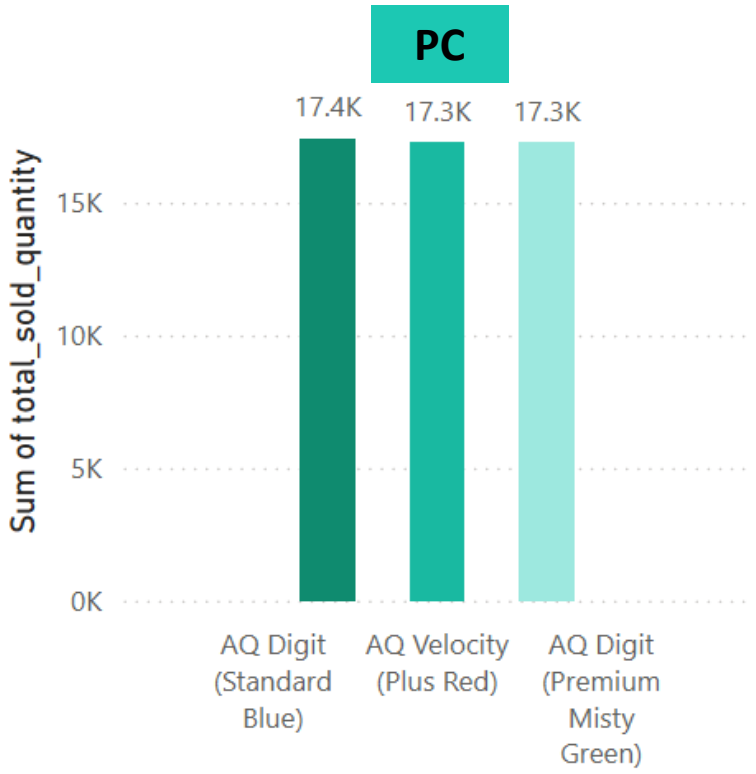
```
with cte1 as(
SELECT
p.division,
p.product_code,
p.product, p.variant,
sum(s.sold_quantity)as total_sold_quantity
FROM fact_sales_monthly s
join dim_product p
on p.product_code = s.product_code
where fiscal_year = 2021
group by  product_code, product),
cte2 as(
select *,
dense_rank() over(partition by division order by
total_sold_quantity desc) as rnk_order
 from cte1)
select *
from cte2
where rnk_order <=3
```

Insights

- The top selling products in **N&S** division were **Pen drives**, which were around **700k** in quantity.
- The top selling products in **P&A** division were **Mouse**, which were around **400k** in quantity.
- The top selling products in **PC** division were **Personal laptops**, which were around **17K** in quantity.







THANK YOU!