CONSUMER GOODS

ad-hoc insights

(Resume Project Challenge)

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AGENDA

COMPANY OVERVIEW

AtliQ Hardwares (imaginary company) is one of the leading computer hardware producers in India and has expanded well in other countries too.

PROBLEM STATEMENT

However, the management noticed that they do not get enough insights to make quick and smart data-informed decisions.

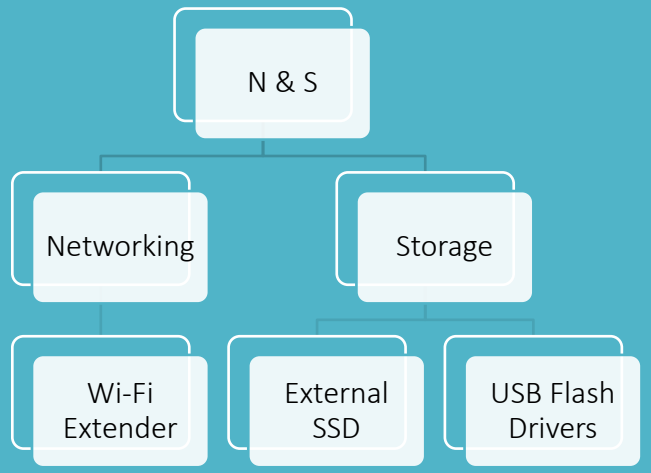
PROBLEM

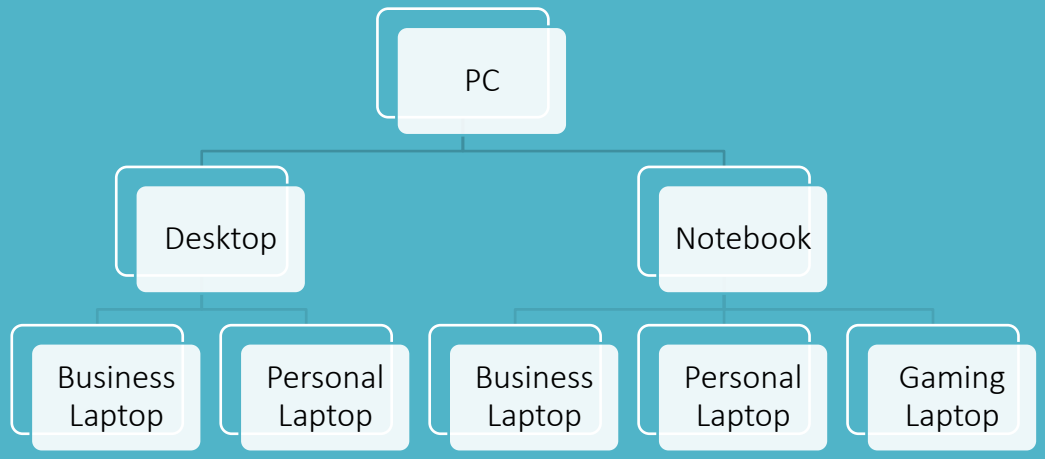
There are 10 ad hoc requests for which the business needs insights

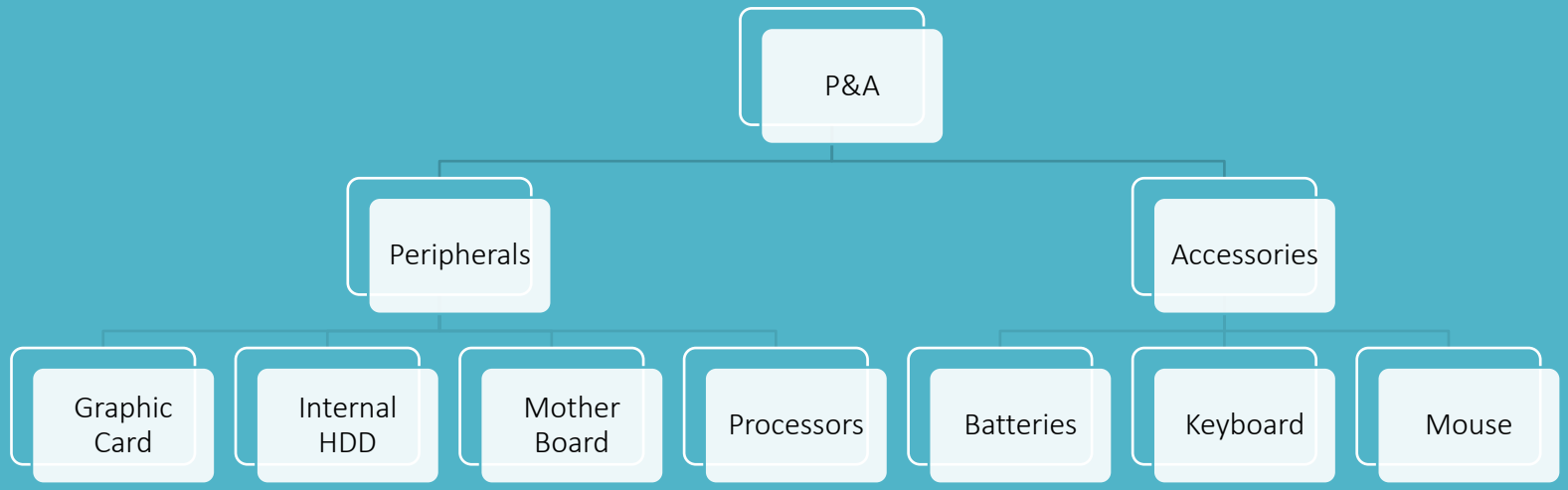
APPROACH

Need to run a SQL query to answer these requests. The target audience of this dashboard is top-level management

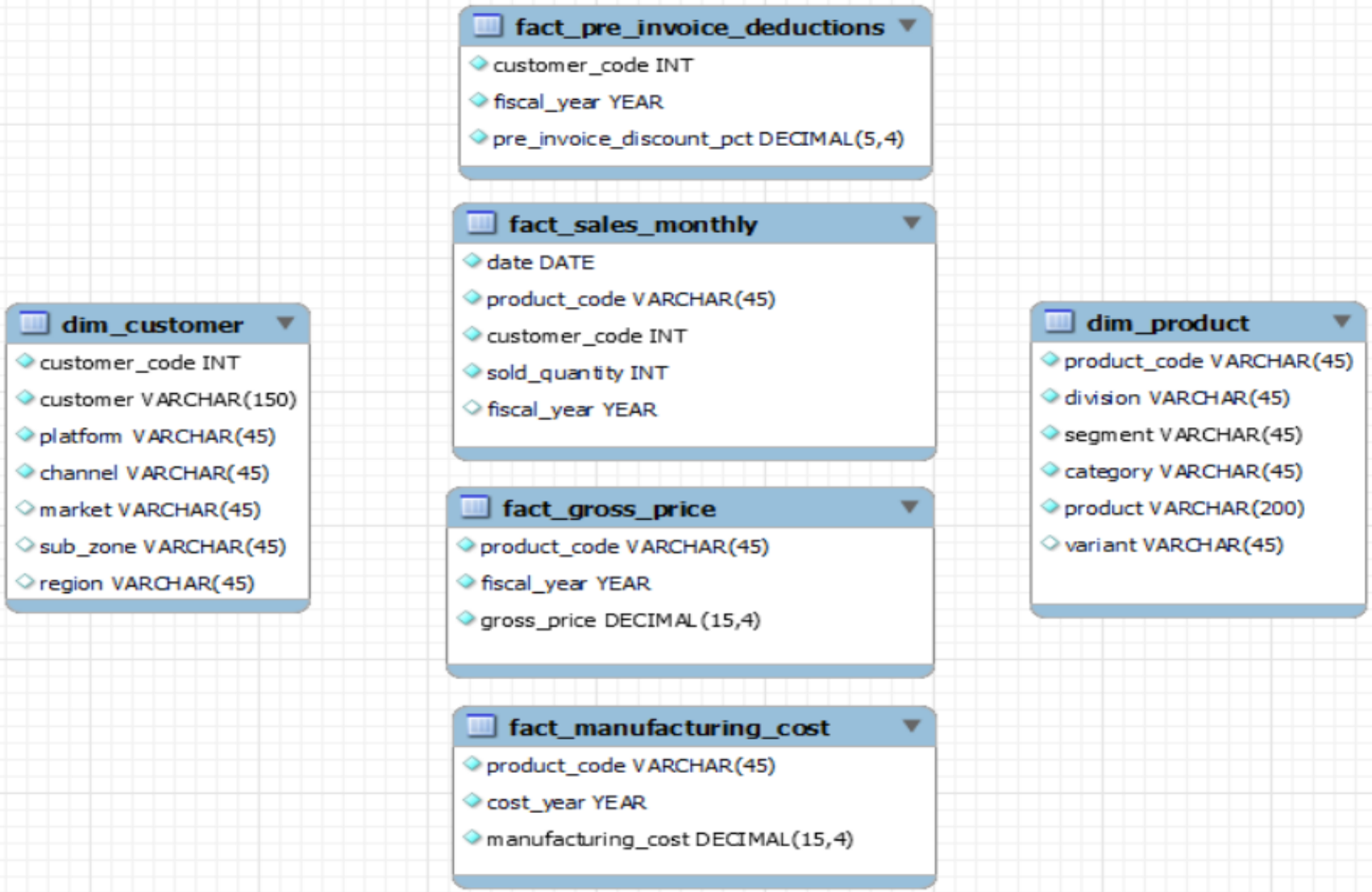
Atliq Markets-Mapview







ATLIQ PRODUCT LINES



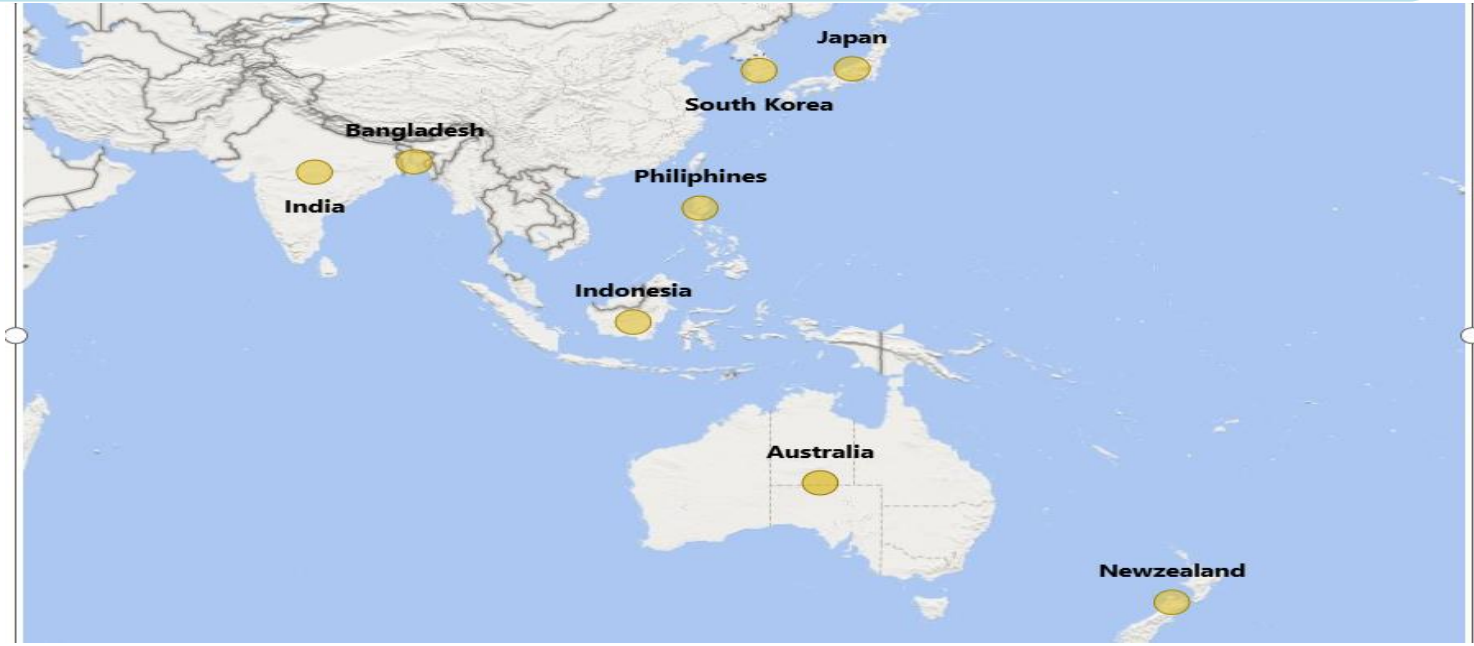
This is the INPUT DATA for this project which consists of Fact tables like fact_sales_monthly, fact_gross_price etc., and Dimension tables like dim customer and dim_product for the Financial Year (FY) 2020 and 2021.

Request-1

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

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

Market
India
Indonesia
Japan
Philiphines
South Korea
Australia
Newzealand
Bangladesh



Insight

In the APAC region "Atliq Exclusive" operates its business in **8 different markets** shows its significant regional market presence.

Request-2

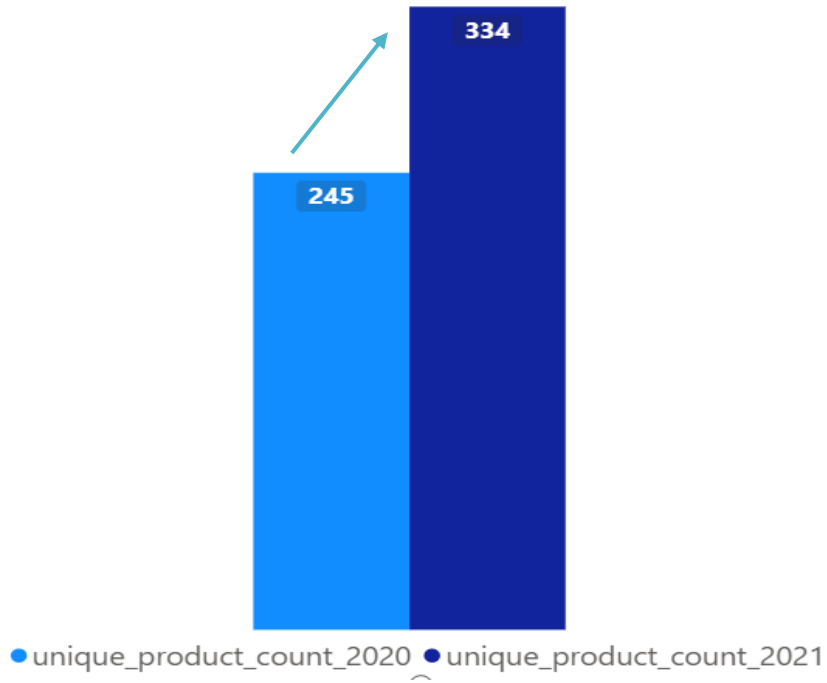
What is the percentage of unique product increase in 2021 vs. 2020? The final output contains these fields,
unique_products_2020 , unique_products_2021 , percentage_chg

```
with cte1 as (
SELECT
	COUNT(DISTINCT product_code) as unique_product_count_2020
FROM
	fact_sales_monthly
WHERE
	fiscal_year=2020
),

cte2 as (
SELECT
	COUNT(DISTINCT product_code) as unique_product_count_2021
FROM
	fact_sales_monthly
WHERE
	fiscal_year=2021)

SELECT *,
	round((unique_product_count_2021unique_product_count_2020)/
unique_product_count_2020*100,2) as pct_change
FROM cte1
JOIN cte2;
```

	unique_product_count_2020	unique_product_count_2021	pct_change
▶	245	334	36.33



Insight

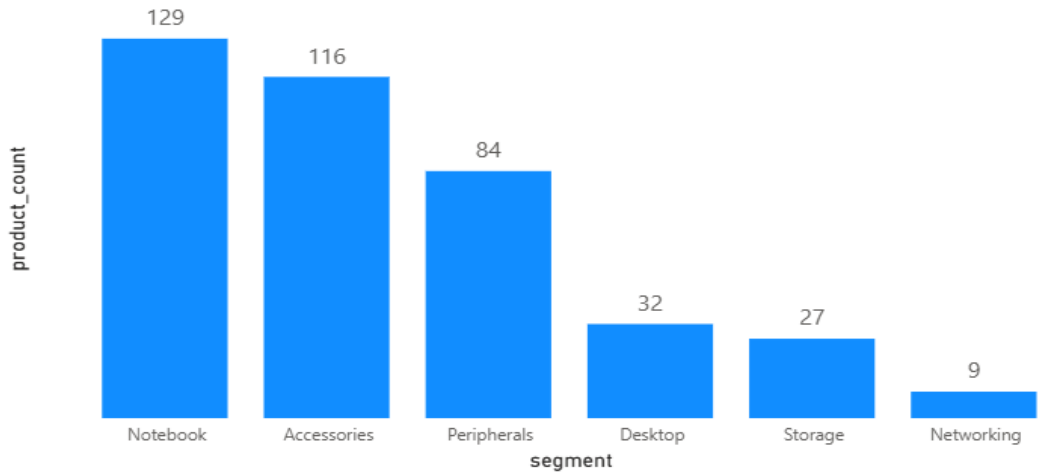
From FY 2020 (245) to FY 2021(334) there is **36.3% increase** in unique_product.

Request-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(product_code) as product_count
FROM
    dim_product
GROUP BY
    segment
ORDER BY
    product_count desc;
```

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



Insight

In each segment of **Notebook, Accessories and Peripherals has wide range of 110 products** in average but need some **improvement in Desktop, Storage and Networking** which has average of only 23 products.

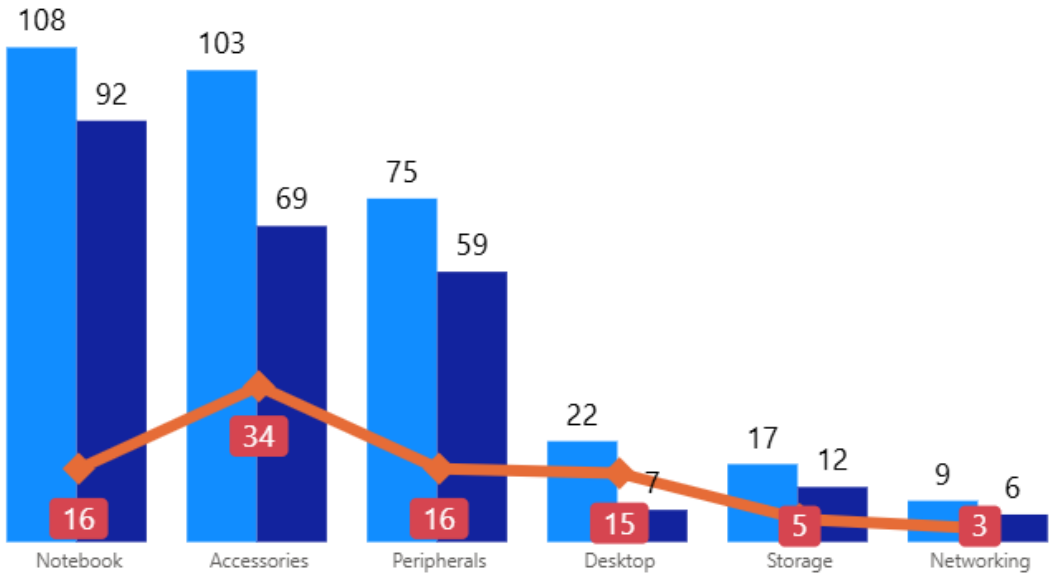
Request-4

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 unique_products as (
SELECT
	p.segment,
	count(distinct(case when fiscal_year=2020 then p.product_code
end)) as product_count_2020,
	count(distinct(case when fiscal_year=2021 then p.product_code
end)) as product_count_2021

FROM dim_product p
JOIN fact_sales_monthly s
ON
	p.product_code=s.product_code
GROUP BY
	p.segment)
SELECT *,
	 (product_count_2021 - product_count_2020) AS difference
FROM
	unique_products
ORDER BY  difference DESC;
```

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



Insight

When we compare both FY's increase in product_count was in **Accessories segment where 34 new product** has been launched in market.

Request-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, 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);
```

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

AQ HOME Allin1 Gen 2

240.54

AQ Master wired x1 Ms

0.89

Insight

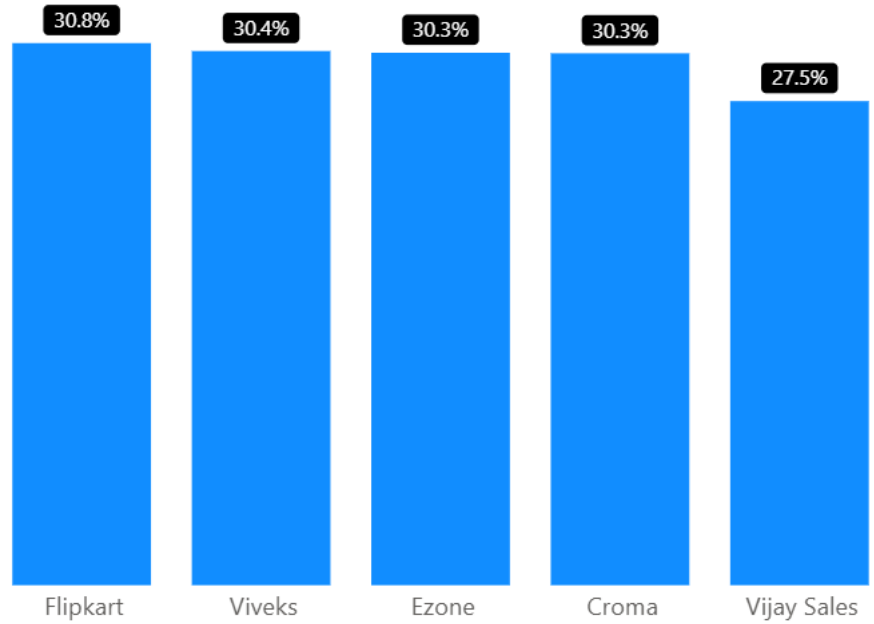
The **personal laptop** has highest manufacturing cost where as **mouse has the lowest**.

Request-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_code, c.customer,
        (SELECT(avg(pre_invoice_discount_pct))) as avg_pid_pct
FROM
        dim_customer c
JOIN
        fact_pre_invoice_deductions p
ON
        p.customer_code = c.customer_code
WHERE
        p.fiscal_year = 2021
and
        c.market = 'India'
GROUP BY
        customer
ORDER BY
        avg_pid_pct desc
LIMIT 5;
```

customer_code	customer	avg_pid_pct
90002009	Flipkart	0.30830000
90002006	Viveks	0.30380000
90002003	Ezone	0.30280000
90002002	Croma	0.30250000
90002004	Vijay Sales	0.27530000



Insight

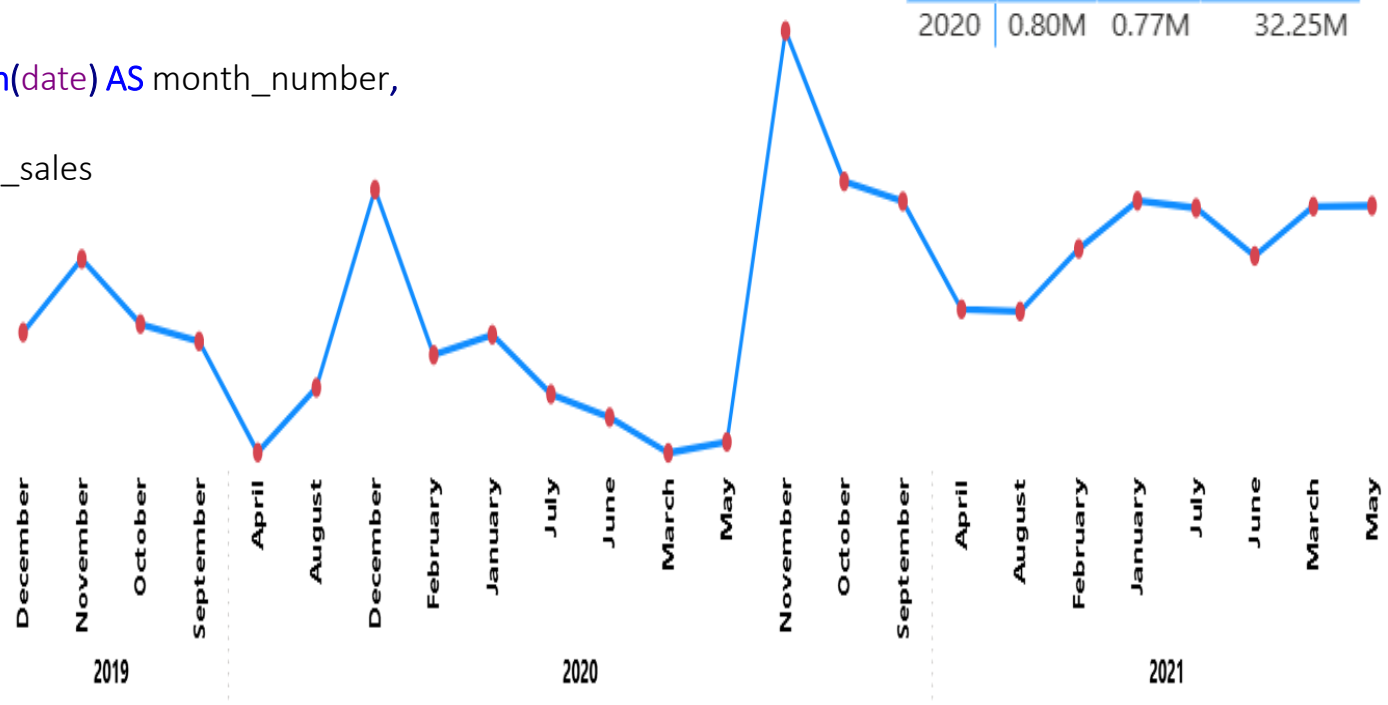
Almost all top 5 customers receive an average of same pre_invoice_discount_pct in that **Flipkart receives the most of 30.8%.**

Request-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

```
WITH temp_table AS (
SELECT
        monthname (date) AS months , month(date) AS month_number,
        year(date) AS year,
        (sold_quantity * gross_price) AS gross_sales
FROM
        fact_sales_monthly s
JOIN
        fact_gross_price g
ON      s.product_code = g.product_code
JOIN
        dim_customer c
ON      s.customer_code = c.customer_code
WHERE
        customer= "Atliq exclusive")
SELECT
        months,year,
        concat(round(sum(gross_sales)/1000000,2),"M") AS gross_sales
FROM temp_table
GROUP BY year,months
ORDER BY year,month_number;
```

Year	April	March	November
2020	0.80M	0.77M	32.25M



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

Insight

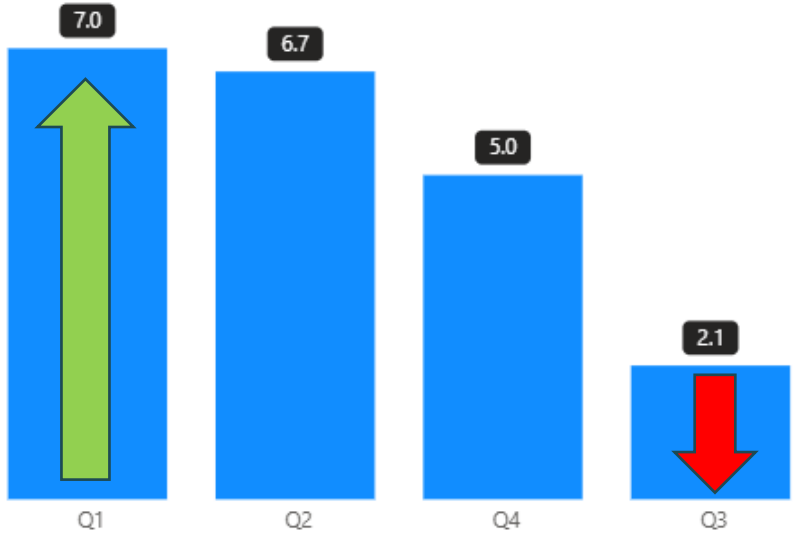
Based on the analysis for the customer Atliq Exclusive in the month of **November, FY 2020 has the gross sales marked (32.25 M)** and **March (0.77M) has the lowest** gross sales.

Request-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 that 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 tem_table as
(SELECT
date,
CEIL (MONTH(DATE_ADD(date, INTERVAL 4 MONTH)) / 3) as Quarter,
sold_quantity
FROM
        fact_sales_monthly
WHERE
         fiscal_year =2020)
SELECT
        CONCAT ( 'Q', Quarter) as Quarter,
        round(sum(sold_quantity)/1000000 , 2) as total_sold_quantity_mln
FROM
        tem_table
GROUP BY
        Quarter;
```

Quarter	total_sold_quantity_mln
Q1	7.01
Q2	6.65
Q3	2.08
Q4	5.04



Insight

The **Q1 of 2020 has the highest sold quantity** where as **Q3 is the lowest** might be because of COVID where as in Q4 the situation reversed to normal.

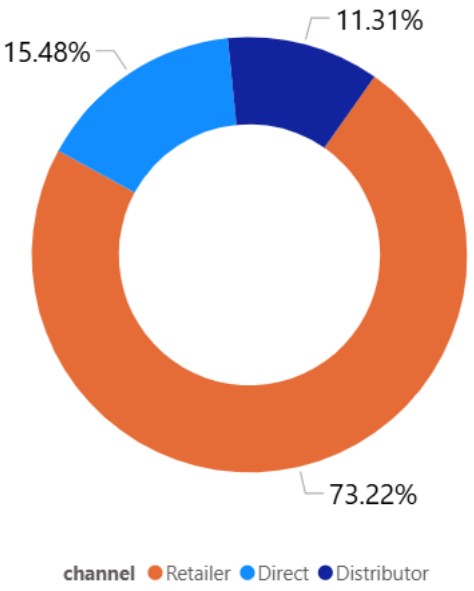
Request-9

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 temp_table as (SELECT
        c.channel,
        round(sum(s.sold_quantity*g.gross_price)/1000000,2) as gross_sales_mln
FROM
        dim_customer c
JOIN
        fact_sales_monthly s
ON
        c.customer_code=s.customer_code
JOIN
        fact_gross_price g
ON
        g.product_code=s.product_code
WHERE
        s.fiscal_year = 2021
GROUP BY c.channel)

SELECT *, gross_sales_mln*100/sum(gross_sales_mln) over() as percentage
FROM
        temp_table
ORDER BY
        percentage desc;
```

channel	gross_sales_mln	percentage
Retailer	1924.17	73.216922
Direct	406.69	15.475031
Distributor	297.18	11.308047



Insight

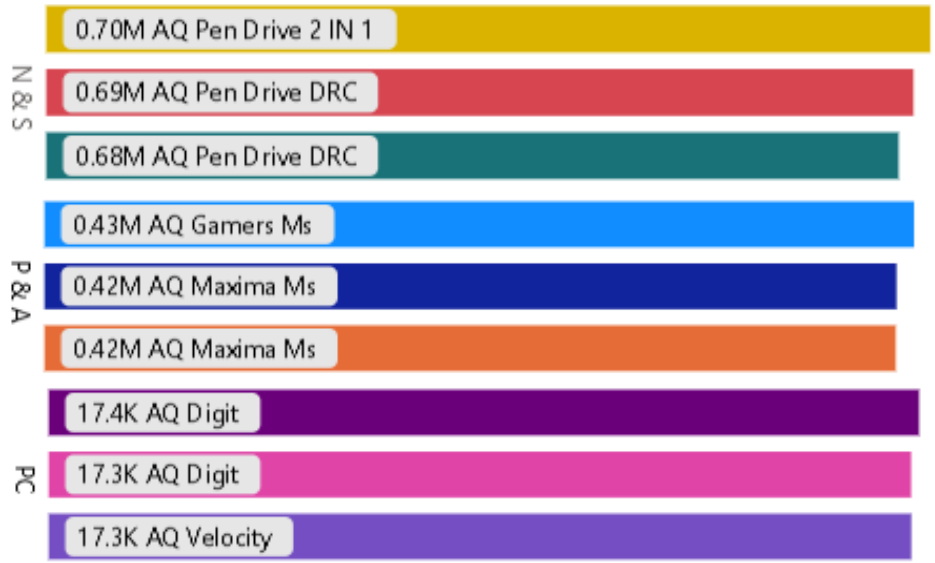
Retailer contributes nearly **73%** rest other Direct and Distributor holds the least for the FY 2021.

Request-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_table as (
SELECT
        p.division,p.product_code,p.product,
        sum(s.sold_quantity) as total_sold_quantity,
        rank() over (partition by division order by (sum(s.sold_quantity)) desc ) as rank_order
FROM
dim_product p
JOIN
        fact_sales_monthly s
ON
        p.product_code = s.product_code
WHERE
        s.fiscal_year=2021
GROUP BY
        product_code
)
SELECT *
FROM
        temp_table
WHERE
        rank_order <=3;
```

division	product_code	product	total_sold_quantity	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



Insight

Top 3 products in N & S were **Pen Drive** , P & A were **mouse** and PC were **personal laptop** sold around 7 lakh, 4 lakh and 17k respectively.

THANK YOU