CONSUMER AD-HOC INSIGHTS

AtliQ Hardware

Presented by - Abhijath Prasanth

Agenda

- Company Overview
- Background/Context
- Data Model & Tools
- Ad-hoc requests , queries & its result, visualizations and Insights

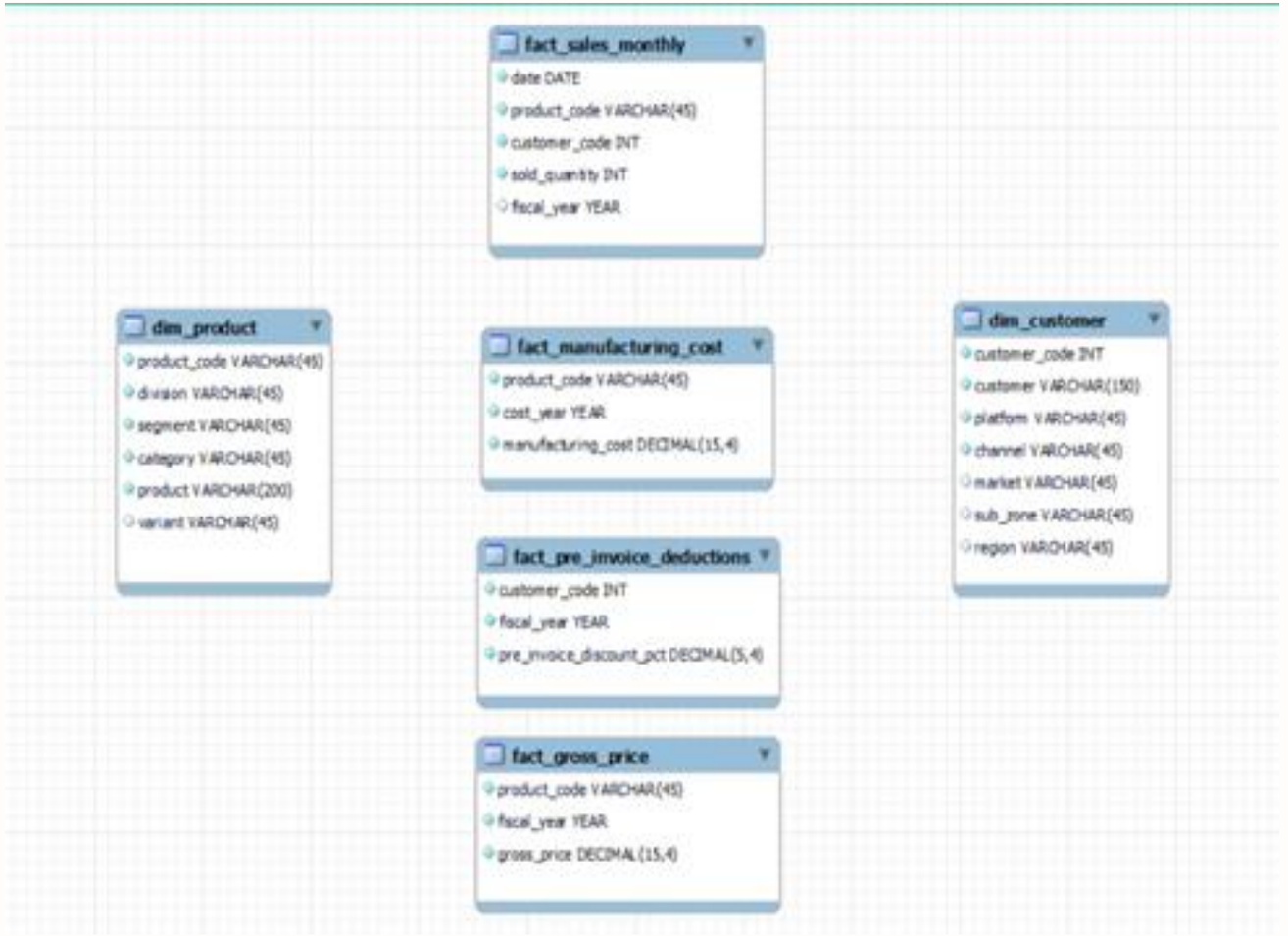
Company Overview

- AtliQ Hardware is a Computer Hardware and Accessory manufacturer.
- It offers products across three main divisions: Networking & Storage PC Peripherals & Accessories
- AtliQ Hardware operates globally in : North America (NA) ,Latin America (LATAM) ,Europe (EU), Asia-Pacific (APAC) regions.

Background/Context

- Atliq Hardwares (imaginary company) - One of the leading computer hardware producers in India.
- The management noticed that they do not get enough insights to make quick and smart data-informed decisions.
- There are 10 ad-hoc requests for which the company needs insights.
- Approach : Run a SQL query to answer these requests .Convert it into visualizations and present the Insights to the top level management.

Data Model & Tools



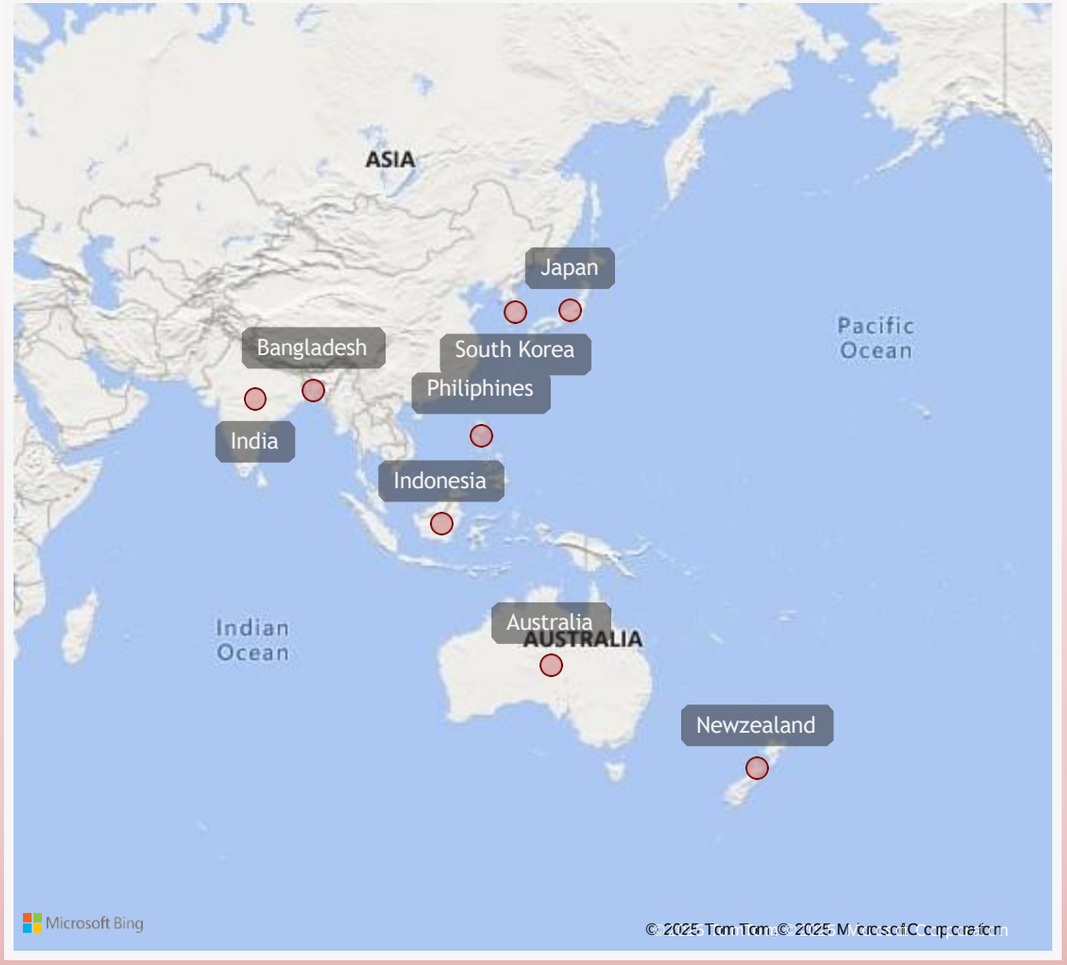
MySQL For Analysis

Power BI for Visualization

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

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

market
India
Indonesia
Japan
Philiphines
South Korea
Australia
Newzealand
Bangladesh

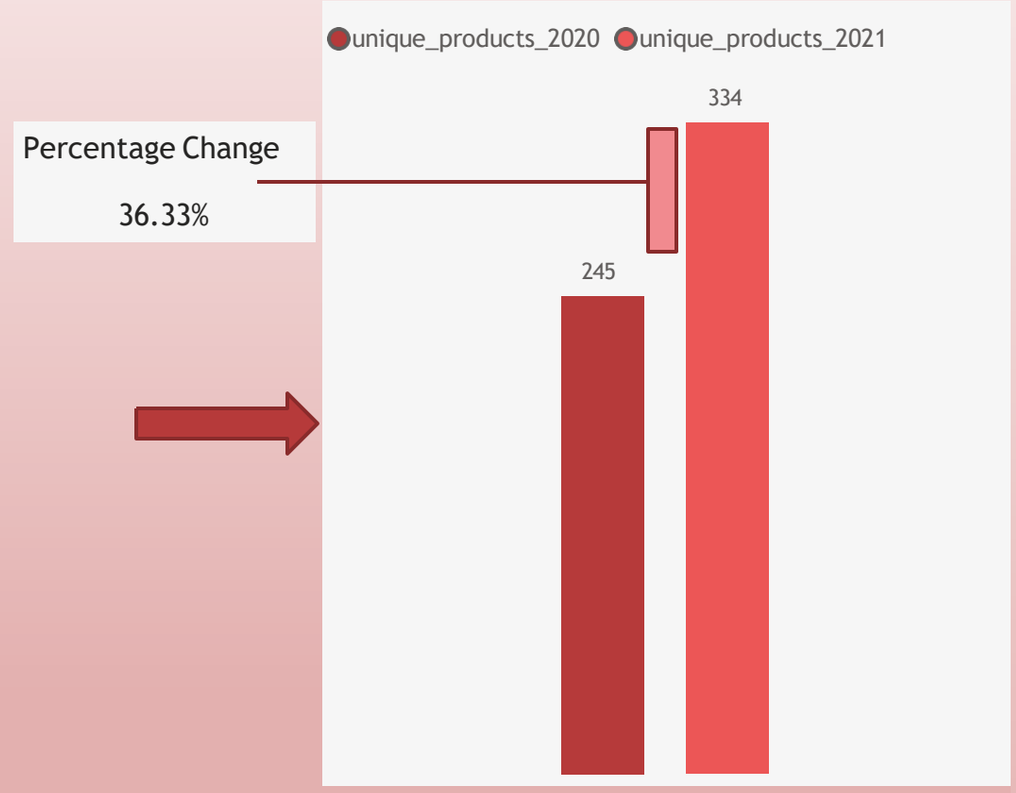


Insights:
In the APAC region, Atiq Exclusive store has established its presence in 8 major markets.

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.

```sql
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) / unique_products_2020 * 100,2) AS percentage_chg
from cte;
```

	unique_products_2020	unique_products_2021	percentage_chg
▶	245	334	36.33



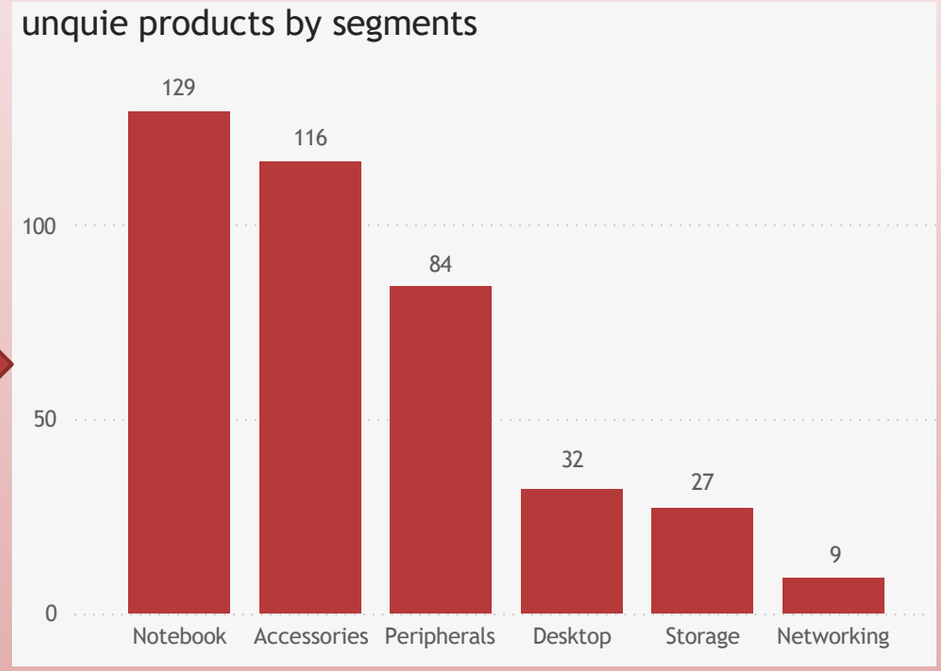
Insights:

In FY 2020 , we had 245 total products, but in FY 2021 it increased by 36% to 334 products.

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.

```sql
SELECT
    segment, COUNT(DISTINCT 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



Insights:

Notebook, Accessories, Peripherals are showing significant growth as compared to Desktops, Storages, Networking.

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.

```sql
with
cte as (SELECT segment, COUNT(DISTINCT product_code) AS product_code_2020 FROM dim_product
 JOIN fact_sales_monthly USING (product_code)
 WHERE fiscal_year = '2020' GROUP BY segment),
cte1 as(SELECT
    segment, COUNT(DISTINCT product_code) AS product_code_2021 FROM dim_product
        JOIN fact_sales_monthly USING (product_code)
        WHERE fiscal_year = '2021'GROUP BY segment )
select *,(product_code_2021-product_code_2020) as Difference from cte
join cte1 using (segment)
group by segment;
```

	segment	product_code_2020	product_code_2021	difference
▶	Accessories	69	103	34
	Desktop	7	22	15
	Networking	6	9	3
	Notebook	92	108	16
	Peripherals	59	75	16
	Storage	12	17	5

Using Case statement:

```sql
SELECT segment,
    COUNT(DISTINCT CASE WHEN fiscal_year = '2020' THEN product_code END) AS product_code_2020,
    COUNT(DISTINCT CASE WHEN fiscal_year = '2021' THEN product_code END) AS product_code_2021,
    COUNT(DISTINCT CASE WHEN fiscal_year = '2021' THEN product_code END)
    - COUNT(DISTINCT CASE WHEN fiscal_year = '2020' THEN product_code END) AS difference
FROM dim_product JOIN fact_sales_monthly USING (product_code)
GROUP BY segment;
```

Segment	Product_code_2021	Product_code_2020	Difference
Accessories	103	69	34
Desktop	22	7	15
Networking	9	6	3
Notebook	108	92	16
Peripherals	75	59	16
Storage	17	12	5

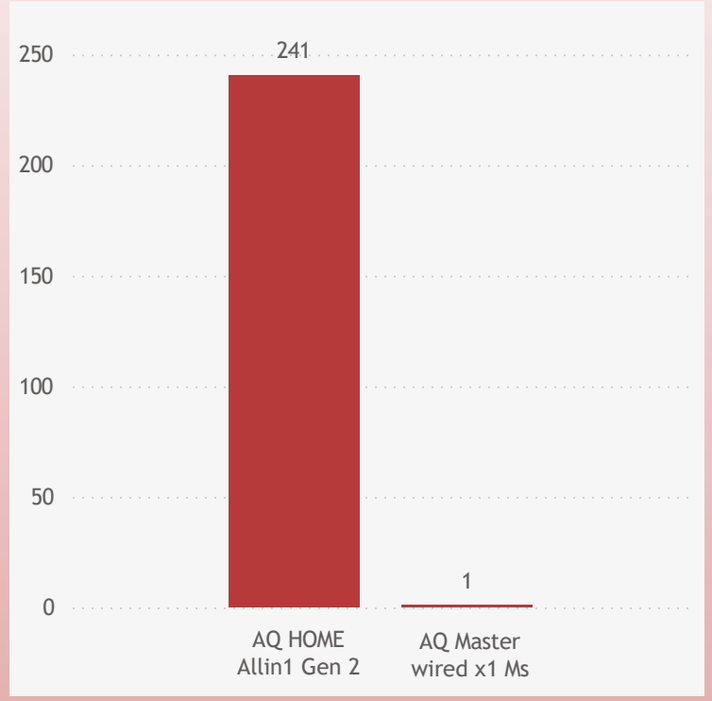
Insights:

In 2021, Its clearly visible that on diversifying unique segments. Accessories segment introduced 34 new products to the market.

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 m.product_code, p.product, m.manufacturing_cost
FROM fact_manufacturing_cost m
        JOIN dim_product p ON m.product_code = p.product_code
WHERE m.manufacturing_cost = (SELECT MAX(manufacturing_cost)
        FROM
            fact_manufacturing_cost)
        OR m.manufacturing_cost = (SELECT
            MIN(manufacturing_cost)
        FROM
            fact_manufacturing_cost);
```

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



Insights:

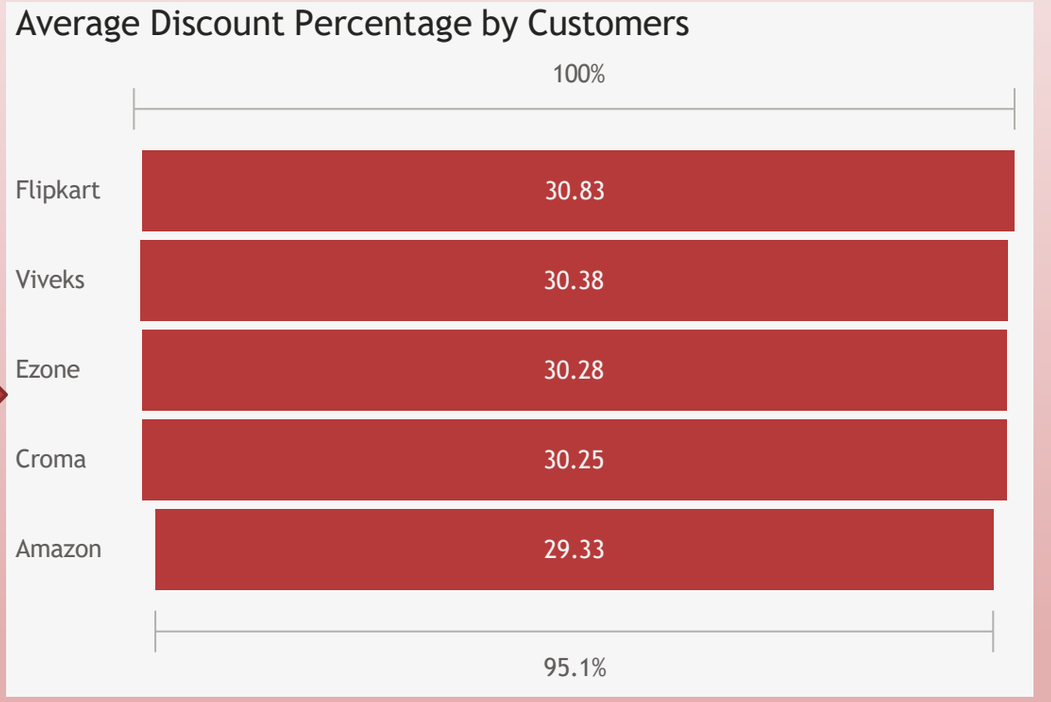
Mouse: AQ Master wired x1 Ms (Variant:Standard1) has the lowest manufacturing cost.

Personal Desktop: AQ Home Allin1 Gen2 (Variant:Plus3) has the highest manufacturing cost.

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

```sql
SELECT
    c.customer_code,
    c.customer,
    AVG(pre_invoice_discount_pct) * 100 AS average_discount_percentage
FROM dim_customer c JOIN
    fact_pre_invoice_deductions p ON c.customer_code = p.customer_code
WHERE market = 'India' AND fiscal_year = '2021'
GROUP BY c.customer_code , c.customer
ORDER BY average_discount_percentage DESC
LIMIT 5;
```

customer_code	customer	average_discount_percentage
90002009	Flipkart	30.83000000
90002006	Viveks	30.38000000
90002003	Ezone	30.28000000
90002002	Croma	30.25000000
90002016	Amazon	29.33000000



Insights:

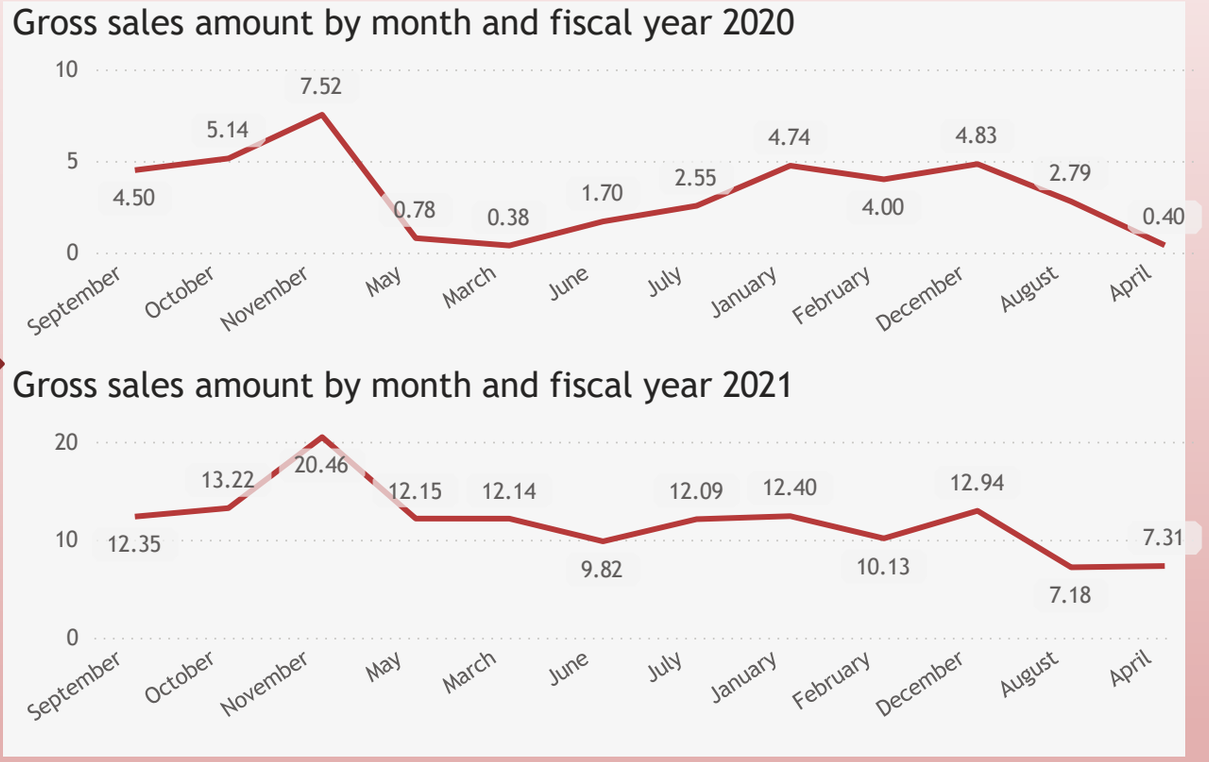
AtliQ Hardware has offered nearly equal pre invoice discount percentage to each of its top 5 customers. The largest average discount % is given to Flipkart and least average discount % is given to Amazon.

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
    MONTHNAME(s.date) AS month,s.fiscal_year,
    SUM(g.gross_price * s.sold_quantity) / 1000000 AS gross_sales_amount
FROM fact_gross_price g JOIN
     fact_sales_monthly s ON g.product_code = s.product_code
        AND g.fiscal_year = s.fiscal_year
        JOIN dim_customer USING (customer_code)
WHERE customer = 'Atliq Exclusive' GROUP BY month , fiscal_year
order by fiscal_year;
```

month	fiscal_year	gross_sales_amount
September	2020	4.49625967
October	2020	5.13590235
November	2020	7.52289256
December	2020	4.83040473
January	2020	4.74060016
February	2020	3.99622777
March	2020	0.37877097
April	2020	0.39503535
May	2020	0.78381342
June	2020	1.69521660
July	2020	2.55115916
August	2020	2.78664826

September	2021	12.35350979
October	2021	13.21863620
November	2021	20.46499910
December	2021	12.94465965
January	2021	12.39939298
February	2021	10.12973557
March	2021	12.14406125
April	2021	7.31199995
May	2021	12.15022501
June	2021	9.82452101
July	2021	12.09234632
August	2021	7.17870759



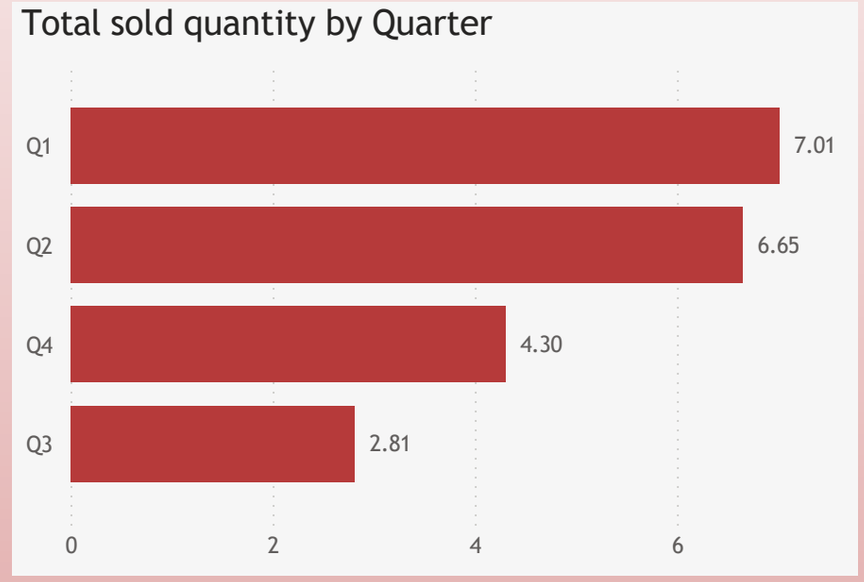
Insights:

The lowest Gross sales amount from both fiscal years is in March (2020). The highest Gross sales amount from both fiscal years is in November (2021).

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.

```sql
SELECT
    CASE
        WHEN MONTH(date) IN (9 , 10, 11) THEN 'Q1'
        WHEN MONTH(date) IN (12 , 1, 2) THEN 'Q2'
        WHEN MONTH(date) IN (3 , 5, 6) THEN 'Q3'
        ELSE 'Q4'
    END AS Quarter,
    ROUND(SUM(sold_quantity) / 1000000, 2) AS total_sold_qty
FROM fact_sales_monthly
WHERE fiscal_year = 2020
GROUP BY Quarter
ORDER BY total_sold_qty DESC;
```

Quarter	total_sold_qty
Q1	7.01
Q2	6.65
Q4	4.30
Q3	2.81



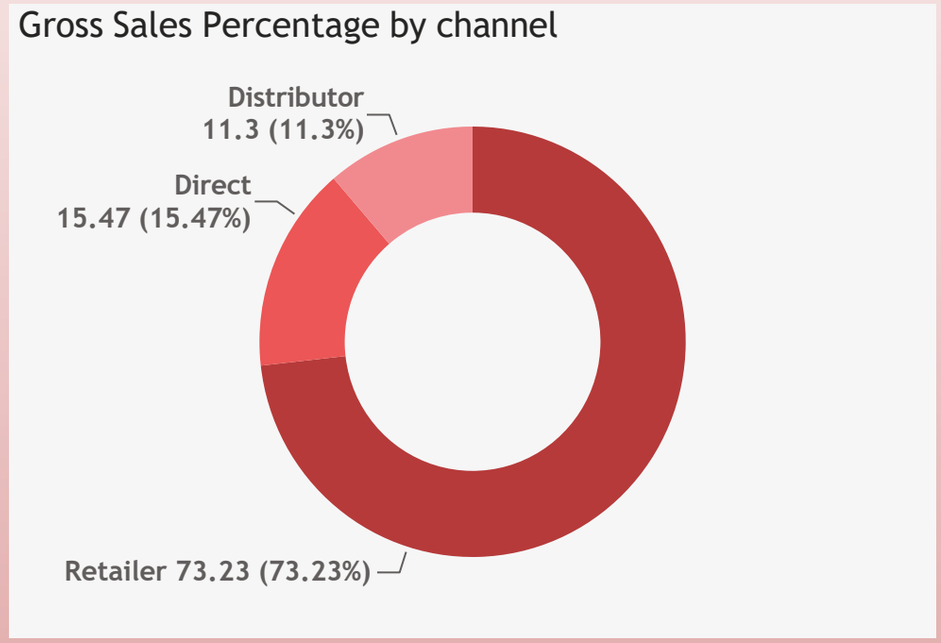
Insights:

Quarter 1 of fiscal year 2020 saw the most units sold overall, Atliq experienced significant decline in Q3 (March, April, May) possibly due to Covid-19 pandameic.

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 cte as(SELECT * FROM fact_gross_price g JOIN fact_sales_monthly
        USING (product_code , fiscal_year)
        JOIN dim_customer USING (customer_code)
        WHERE fiscal_year = 2021),
cte1 as (SELECT SUM(gross_price * sold_quantity) / 1000000 AS gross_sales_total FROM cte )
SELECT channel,
    SUM(gross_price * sold_quantity) / 1000000 AS gross_sales_amount,
    (SUM(gross_price * sold_quantity) / 1000000) / c.gross_sales_total * 100 AS percentag
FROM cte CROSS JOIN cte1 c GROUP BY channel;
```

	channel	gross_sales_amount	percentag
▶	Direct	257.53200265	15.470739321519
	Distributor	188.02563093	11.295277837231
	Retailer	1219.08163995	73.233982840890



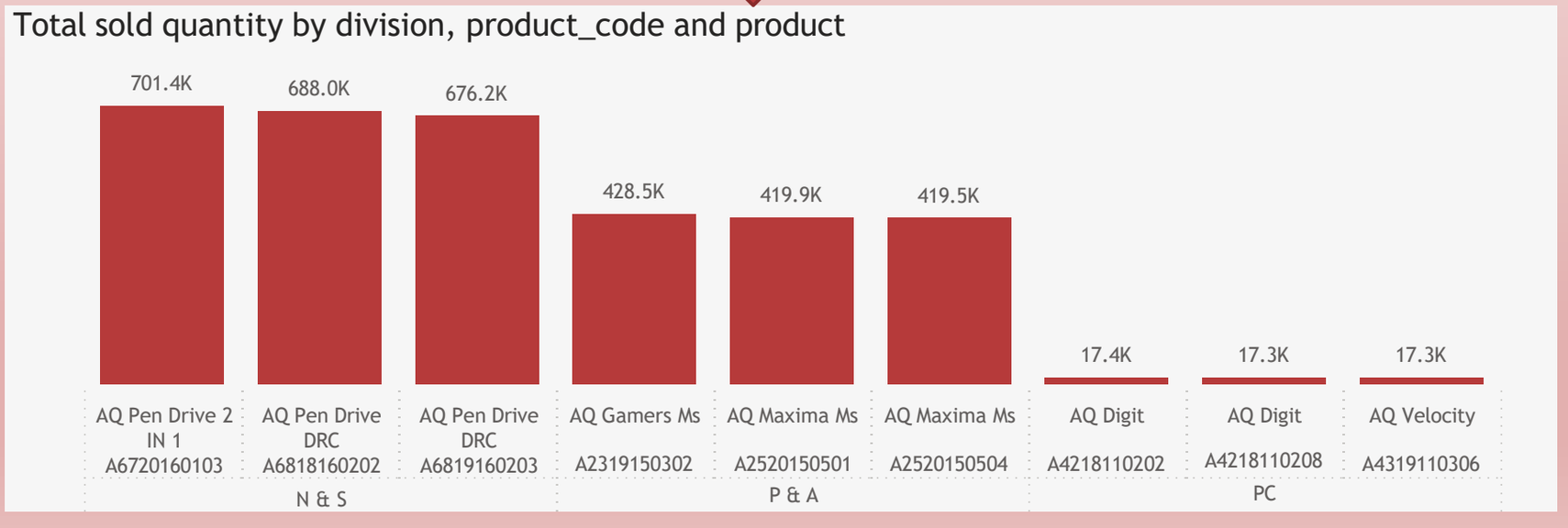
Insights:

The majority of sales, 73.22%, came through retailers, while direct and distributor channels contributed significantly less, at 15.48% and 11.31%, respectively

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

```sql
with cte as(
SELECT division,product_code,product,
    SUM(sold_quantity) AS total_sold_quantity,
rank () over(partition by division order by sum(sold_quantity) desc) as rank_order
from fact_sales_monthly
join dim_product using (product_code)
where fiscal_year=2021
group by division,product_code,product)
SELECT * FROM cte 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:

Every division has a product with different variants that appears twice in the top three products by division list.

THANK YOU