

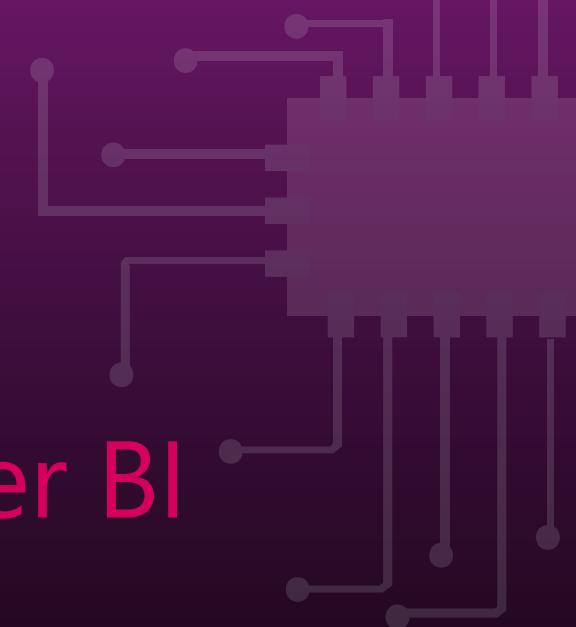


CONSUMER AD-HOC INSIGHTS

Presented by – PARTHA HALDER



Power BI



AGENDA

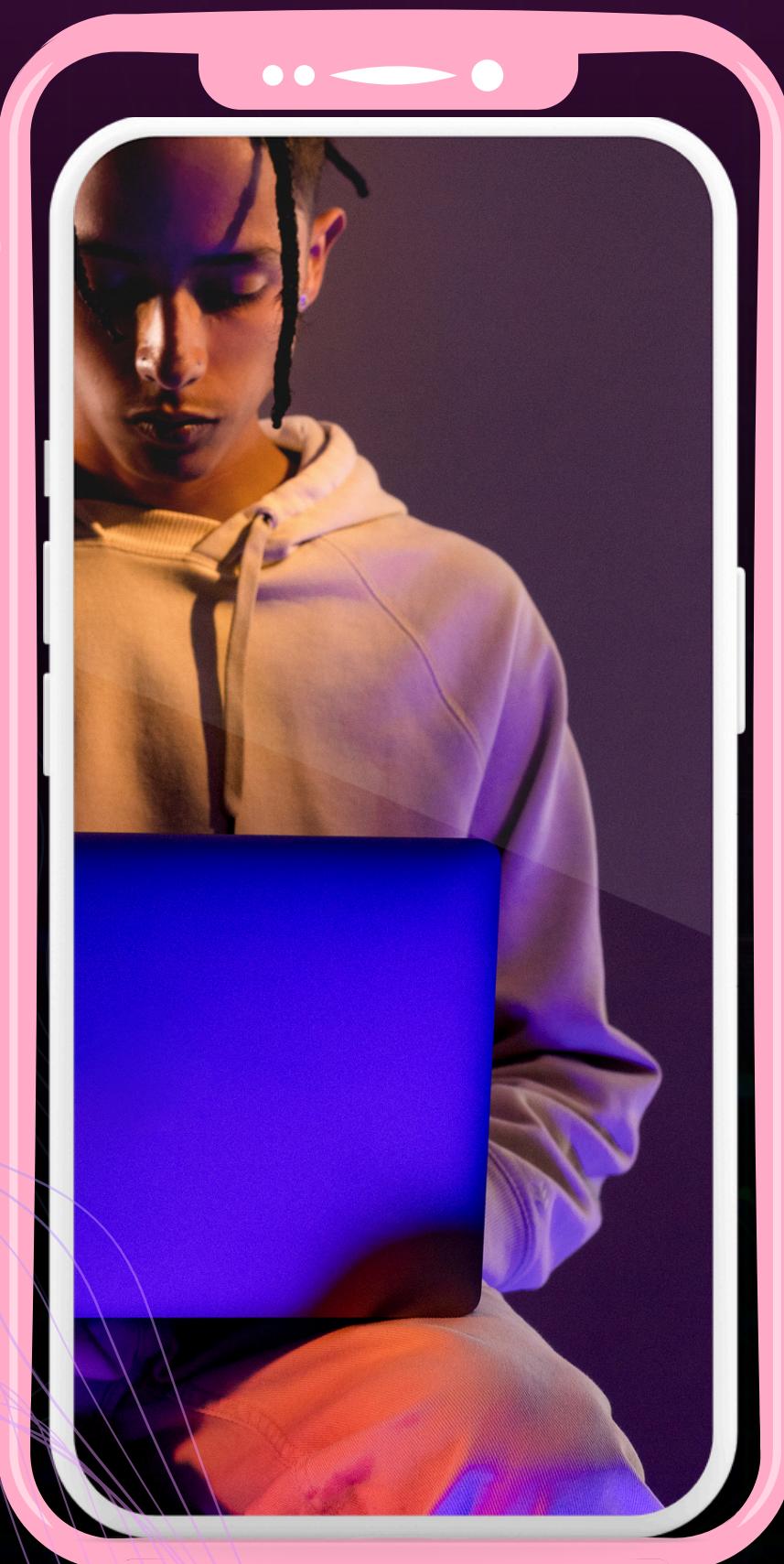
OVERVIEW

PRODUCT
LINE

PROBLEM
STATEMENT

AD-HOC
REQUEST
&
OUTPUT &
INSIGHTS

RECOMMEN
DATION





OVERVIEW

AtliQ Hardware is a globally recognized leader in consumer electronics, specializing in a diverse range of high-quality hardware products such as PCs, mice, keyboards, printers, and more.

As an international hardware powerhouse, AtliQ Hardware operates across multiple countries, driving innovation to deliver state-of-the-art technology that enhances productivity and elevates experiences in homes and workplaces worldwide.



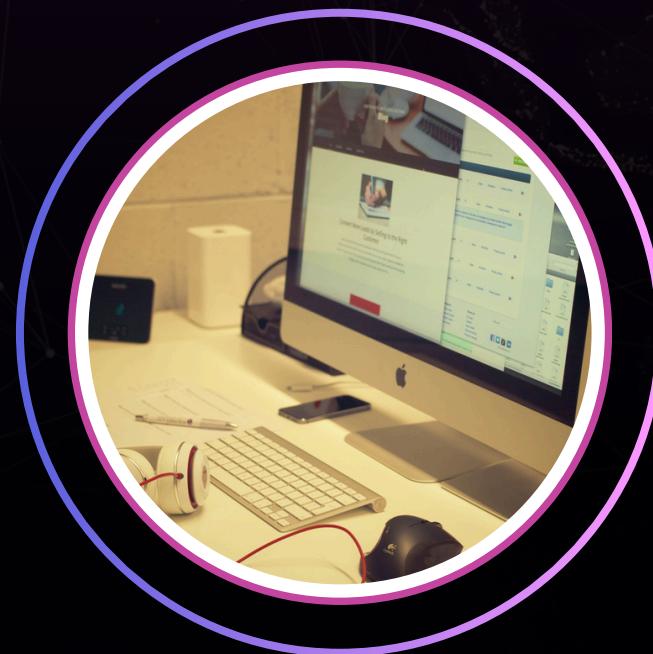
PRODUCT LINE



PC



Networking & Storage



Peripherals & Accessories



PROBLEM STATEMENT

- The management noticed that they do not get enough insights to make quick and smart data-informed decisions.
- So to expand their data analytics team, they're conducting a SQL challenge to assess candidates' technical expertise and problem-solving abilities.
- So, the company seeks insights for 10 ad-hoc requests.

Codebasics SQL Challenge

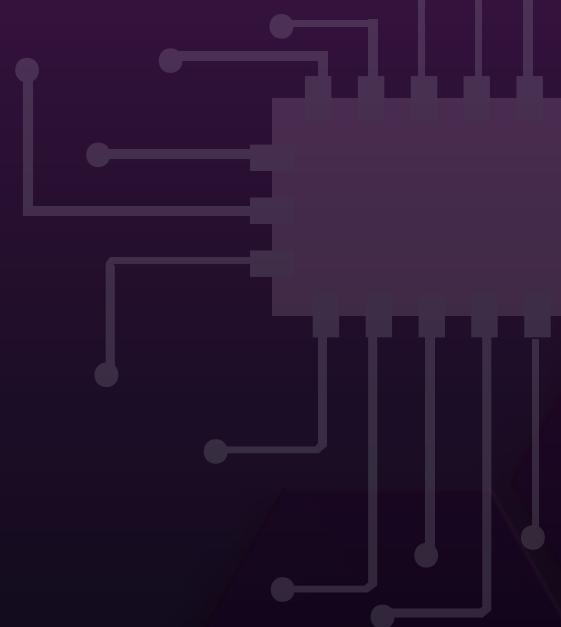
Requests:

1. Provide the list of markets in which customer "Atlin Exclusive" operates its business in the APAC region.
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
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 these fields,
segment
product_count
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
5. Get the products that have the highest and lowest manufacturing cost. The final output should contain these fields,
product_code
product
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
average_discount_percentage
7. Get the complete report of the Gross sales amount for the customer "Atlin 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
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
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_min
percentage
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

codebasics.io



AD-HOC REQUESTS OUTPUT & INSIGHTS



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

Ans -

```
SELECT DISTINCT MARKET
FROM dim_customer
WHERE CUSTOMER = "Atliq Exclusive"
      AND REGION = "APAC";
```





AD-HOC REQUESTS OUTPUT & INSIGHTS



Insight -
AtliQ Exclusive operates in 8 countries within the APAC region , demonstrate the significance regional market presence.



AD-HOC REQUESTS OUTPUT & INSIGHTS

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

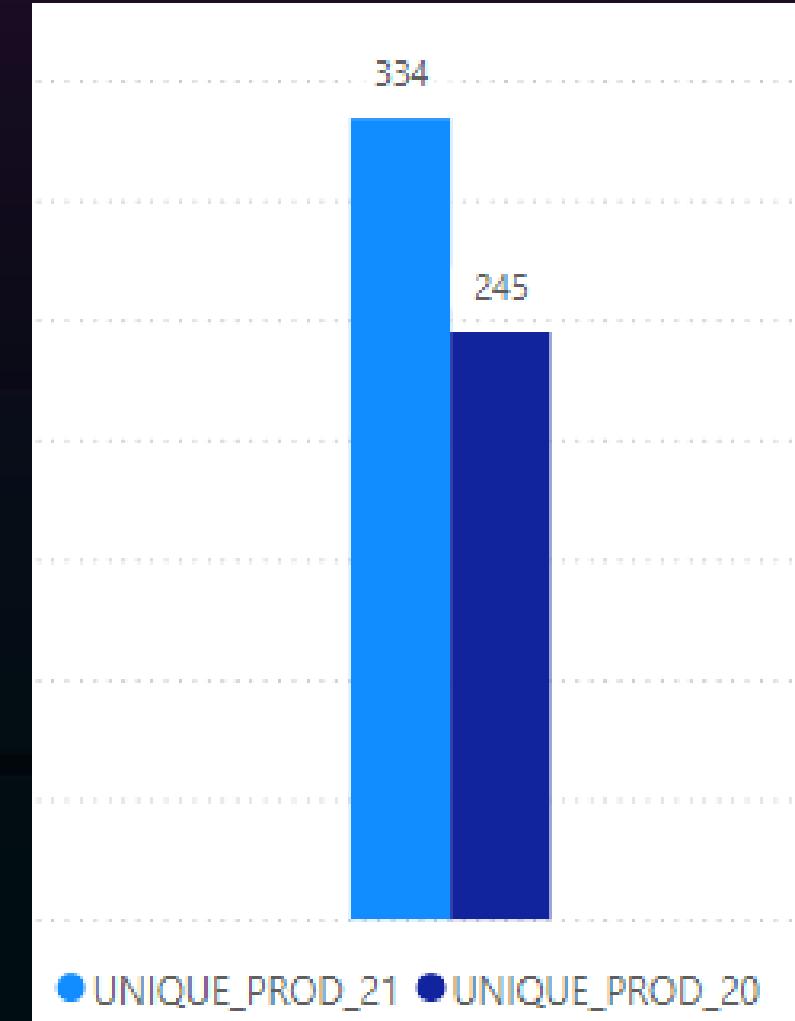
Ans -

```
WITH UP20 AS (
  SELECT COUNT(DISTINCT PRODUCT_CODE) AS C20
  FROM fact_sales_monthly
  WHERE FISCAL_YEAR = 2020
),
UP21 AS (
  SELECT COUNT(DISTINCT PRODUCT_CODE) AS C21
  FROM fact_sales_monthly
  WHERE FISCAL_YEAR = 2021
)
SELECT B.C21 AS UNIQUE_PROD_21, A.C20 AS UNIQUES_PROD_20 ,
(B.C21 - A.C20)*100 / A.C20 AS PCT_DIFFERENCE
FROM UP20 A ,UP21 B;
```



AD-HOC REQUESTS OUTPUT & INSIGHTS

UNIQUE_PROD_21	UNIQUE_PROD_20	PCT_DIFFERENCE
334	245	36.3265



Insight -

- The number of unique products grew from 245 in 2020 to 334 in 2021, marking a 36.33% increase.
- The significant increase highlights the company's commitment to innovation in terms of diverse customer needs.



AD-HOC REQUESTS OUTPUT & INSIGHTS

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

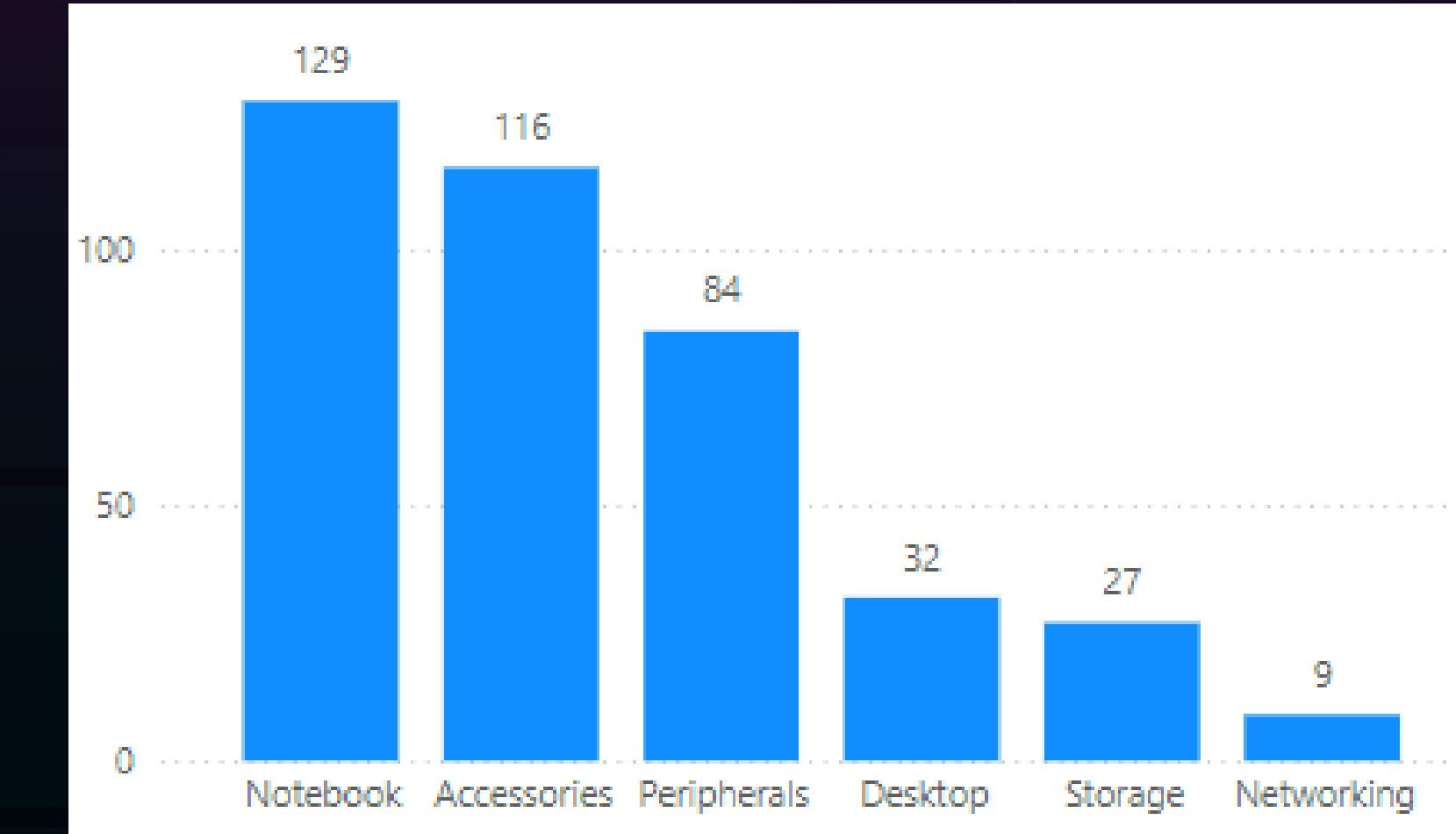
Ans -

```
SELECT SEGMENT ,COUNT(DISTINCT PRODUCT_CODE) AS PROD_COUNT
FROM DIM_PRODUCT
GROUP BY SEGMENT
ORDER BY PROD_COUNT DESC;
```



AD-HOC REQUESTS OUTPUT & INSIGHTS

SEGMENT	PROD_COUNT
Notebook	129
Accessories	116
Peripherals	84
Desktop	32
Storage	27
Networking	9



Insight -

- AtliQ is doing great in Notebook, Accessories and Peripheral Segment . It has the Major Percentage.
- But AtliQ should focus on rest segments as well to boost their sales and business.



AD-HOC REQUESTS OUTPUT & INSIGHTS

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

Ans -

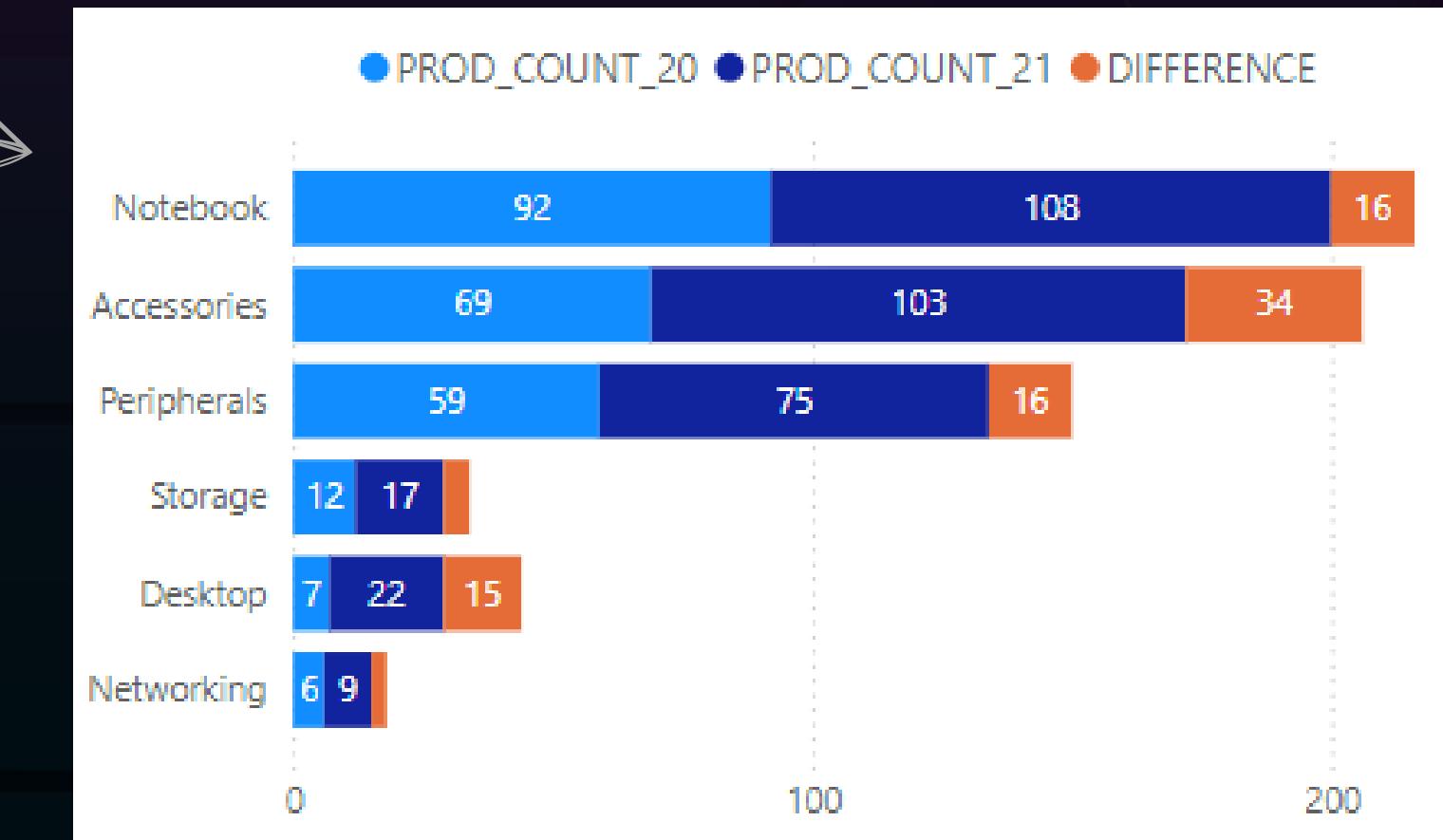
```
WITH PROD_20 AS (
  SELECT P.SEGMENT , COUNT(DISTINCT P.PRODUCT_CODE) AS PROD_COUNT_20
  FROM FACT_SALES_MONTHLY S
  INNER JOIN DIM_PRODUCT P
  ON S.PRODUCT_CODE = P.PRODUCT_CODE
  WHERE S.FISCAL_YEAR = 2020
  GROUP BY P.SEGMENT
  ORDER BY PROD_COUNT_20 DESC),
PROD_21 AS (
  SELECT P.SEGMENT , COUNT(DISTINCT P.PRODUCT_CODE) AS PROD_COUNT_21
  FROM FACT_SALES_MONTHLY S
  INNER JOIN DIM_PRODUCT P
  ON S.PRODUCT_CODE = P.PRODUCT_CODE
  WHERE S.FISCAL_YEAR = 2021
  GROUP BY P.SEGMENT
  ORDER BY PROD_COUNT_21 DESC
)
SELECT A.SEGMENT , A.PROD_COUNT_20 , B.PROD_COUNT_21 ,
(B.PROD_COUNT_21 - A.PROD_COUNT_20) AS DIFFERENCE
FROM PROD_20 A
INNER JOIN PROD_21 B
ON A.SEGMENT = B.SEGMENT
ORDER BY DIFFERENCE DESC;
```



AD-HOC REQUESTS OUTPUT & INSIGHTS



SEGMENT	PROD_COUNT_20	PROD_COUNT_21	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 -

- Accessories have the most increased products from 2020 to 2021, with an increase of 34 new products.
- Desktop products production increased drastically by around 214%
- Storage and Networking segments are producing the least number of products.



AD-HOC REQUESTS OUTPUT & INSIGHTS

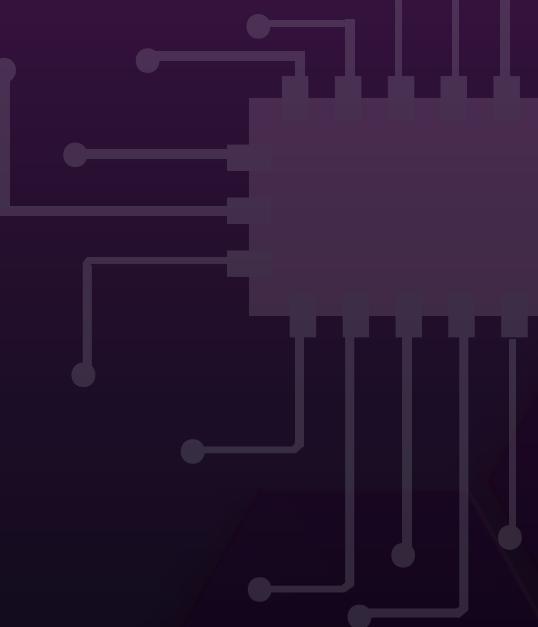
5. Get the products that have the highest and lowest manufacturing costs. The final output should contain these fields-
product_code, product, manufacturing_cost

Ans -

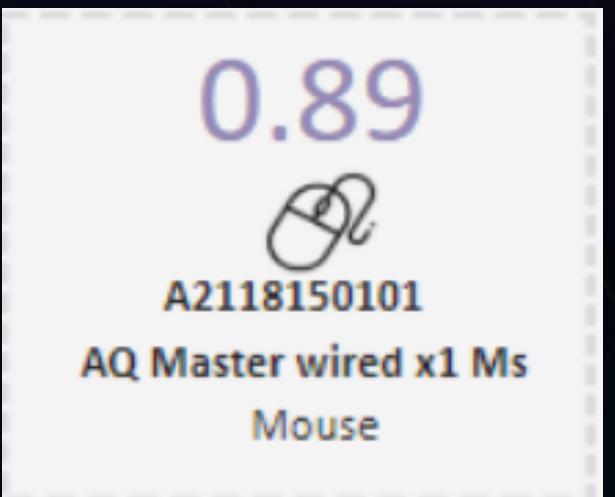
```
SELECT P.PRODUCT , M.PRODUCT_CODE , M.MANUFACTURING_COST
FROM fact_manufacturing_cost M
INNER JOIN dim_product P
ON M.PRODUCT_CODE = P.PRODUCT_CODE
WHERE M.MANUFACTURING_COST IN
  (SELECT MAX(manufacturing_cost) FROM fact_manufacturing_cost
  UNION
  SELECT MIN(manufacturing_cost) FROM fact_manufacturing_cost)
ORDER BY M.MANUFACTURING_COST DESC;
```



AD-HOC REQUESTS OUTPUT & INSIGHTS



PRODUCT	PRODUCT_CODE	MANUFACTURING_COST
AQ HOME Allin1 Gen 2	A6120110206	240.5364
AQ Master wired x1 Ms	A2118150101	0.8920



Insight -

- AQ HOME Allin 1 Gen 2 is the highest in terms of manufacturing cost.
- AQ Master Wired x 1 MS is the lowest in terms of manufacturing cost.



AD-HOC REQUESTS OUTPUT & INSIGHTS

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

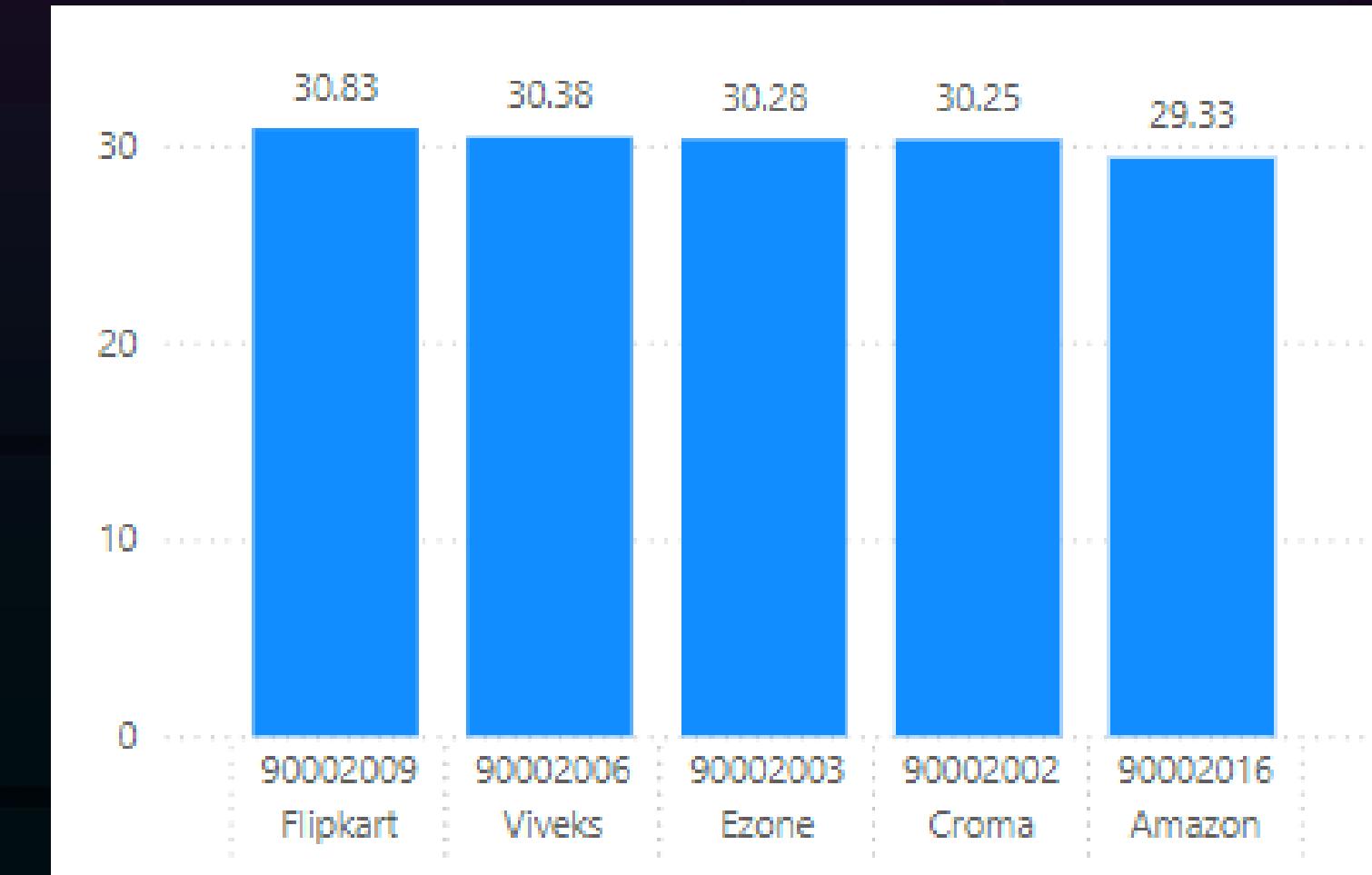
Ans -

```
SELECT
C.CUSTOMER,D.CUSTOMER_CODE,
ROUND(AVG(D.PRE_INVOICE_DISCOUNT_PCT)*100,2) AS AVG_DISCOUNT_PCT
FROM DIM_CUSTOMER C
INNER JOIN fact_pre_invoice_deductions D
ON C.CUSTOMER_CODE = D.CUSTOMER_CODE
WHERE D.FISCAL_YEAR = 2021 AND C.MARKET = "INDIA"
GROUP BY C.CUSTOMER , D.CUSTOMER_CODE
ORDER BY AVG_DISCOUNT_PCT DESC
LIMIT 5;
```



AD-HOC REQUESTS OUTPUT & INSIGHTS

CUSTOMER	CUSTOMER_CODE	AVG_DISCOUNT_PCT
Flipkart	90002009	30.83
Viveks	90002006	30.38
Ezone	90002003	30.28
Croma	90002002	30.25
Amazon	90002016	29.33



Insight -

- Flipkart leads the list with the highest average discount percentage of 30.83%.
- AtliQ has provided relatively uniform discount percentages to its top 5 customers in range of discounts from 29.33% to 30.83%.



AD-HOC REQUESTS OUTPUT & INSIGHTS

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

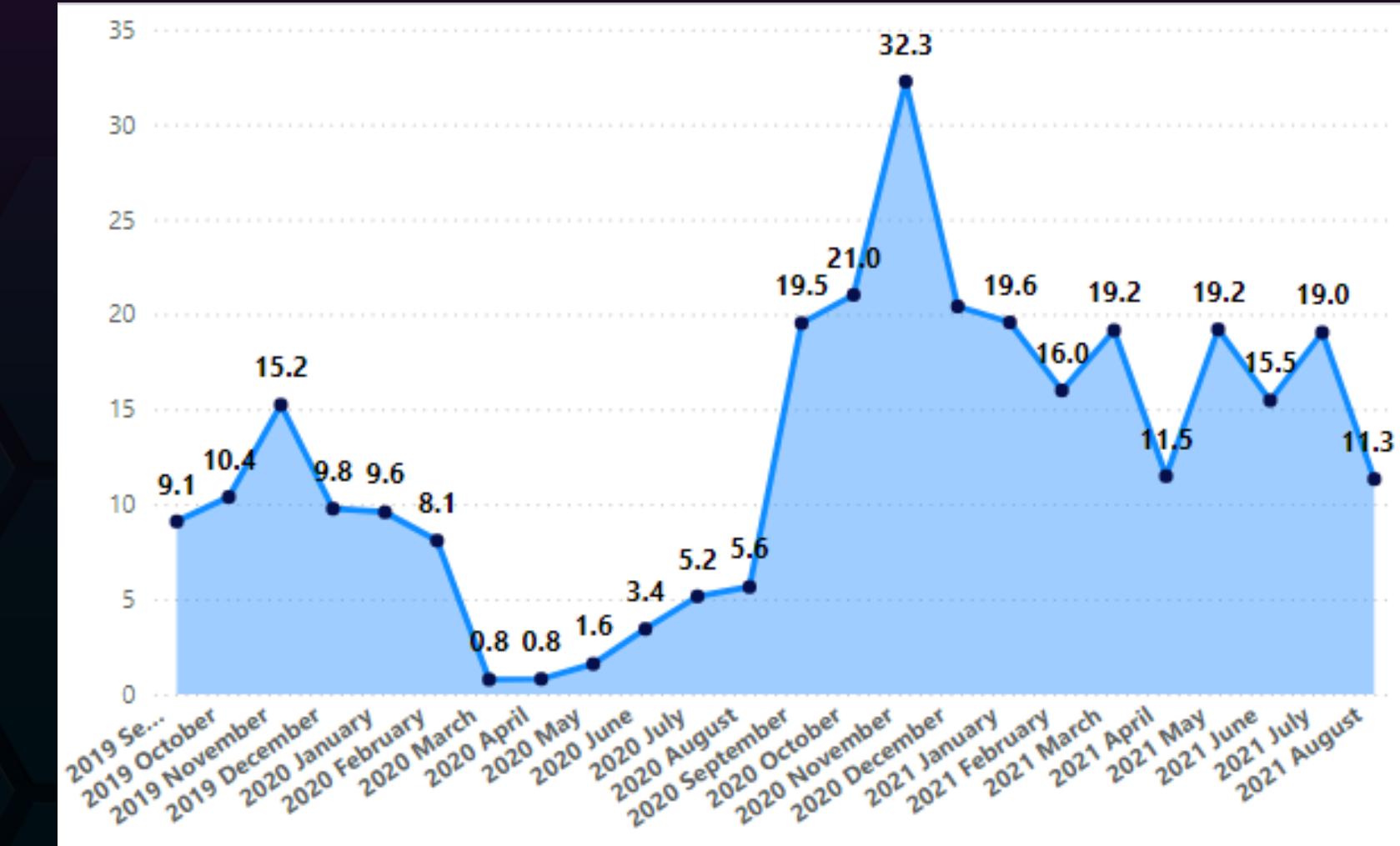
Ans -

```
SELECT MONTHNAME(S.DATE) AS MONTH ,YEAR(S.DATE) AS YEAR ,  
ROUND((SUM(G.GROSS_PRICE*S.SOLD_QUANTITY))/1000000,2) AS  
GROSS_SALES_AMOUNT_ML  
FROM FACT_SALES_MONTHLY S  
INNER JOIN FACT_GROSS_PRICE G  
ON S.PRODUCT_CODE = G.PRODUCT_CODE  
INNER JOIN DIM_CUSTOMER C  
ON S.CUSTOMER_CODE = C.CUSTOMER_CODE  
WHERE CUSTOMER = "ATLIQ EXCLUSIVE"  
GROUP BY MONTH , YEAR  
ORDER BY YEAR;
```



AD-HOC REQUESTS OUTPUT & INSIGHTS

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



Insight -

- March, April, May recorded the lowest sales in 2020, likely due to COVID 19 pandemic. sales began to recover after June 2020.
- November generated the highest sales for 2020 with around 15.23 million.
- Sales figure in 2021 show significant growth compared to 2020.



AD-HOC REQUESTS OUTPUT & INSIGHTS

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

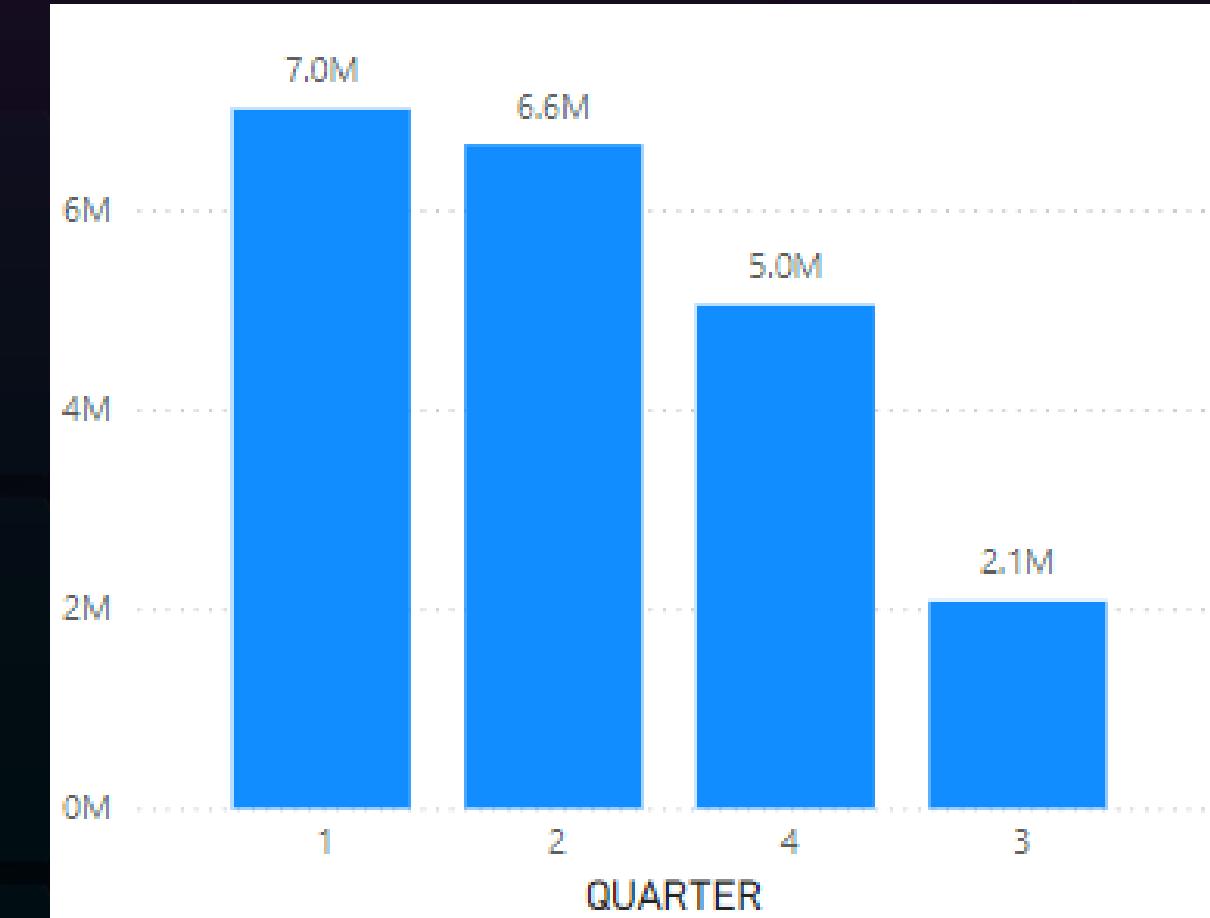
Ans -

```
SELECT QUARTER(DATE_ADD(DATE, INTERVAL 4 MONTH)) AS QUARTER ,  
SUM(SOLD_QUANTITY) AS TOTAL SOLD_QTY  
FROM FACT_SALES_MONTHLY  
WHERE FISCAL_YEAR = 2020  
GROUP BY QUARTER  
ORDER BY TOTAL SOLD_QTY DESC;
```



AD-HOC REQUESTS OUTPUT & INSIGHTS

QUARTER	TOTAL_SOLD_QTY
1	7005619
2	6649642
4	5042541
3	2075087



Insight -

- Q1 2020 saw the highest sales volume, reaching around 7 million units, indicating strong performance early in the year.
- AtliQ experienced a significant decline in sales during Q3 (March, April, May) due to COVID 19 pandemic, reflecting tough market condition.



AD-HOC REQUESTS OUTPUT & INSIGHTS

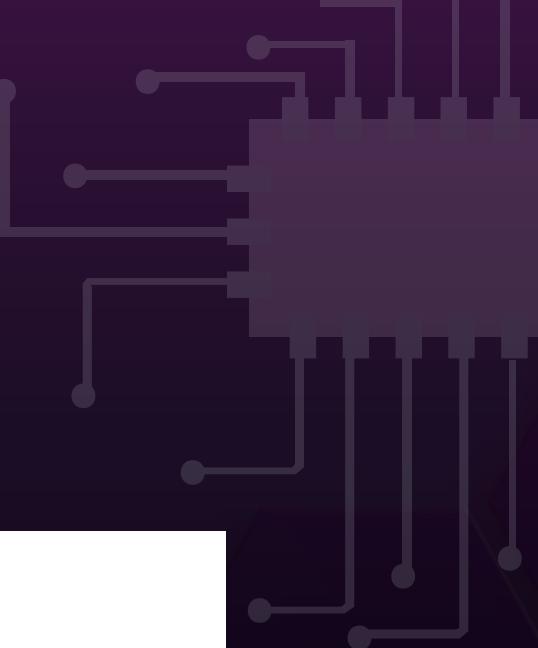
9. Which channel helped to bring more gross sales in the fiscal year 2021 and the percentage of contribution? The final output contains these fields - channel, gross_sales_mln, percentage

Ans -

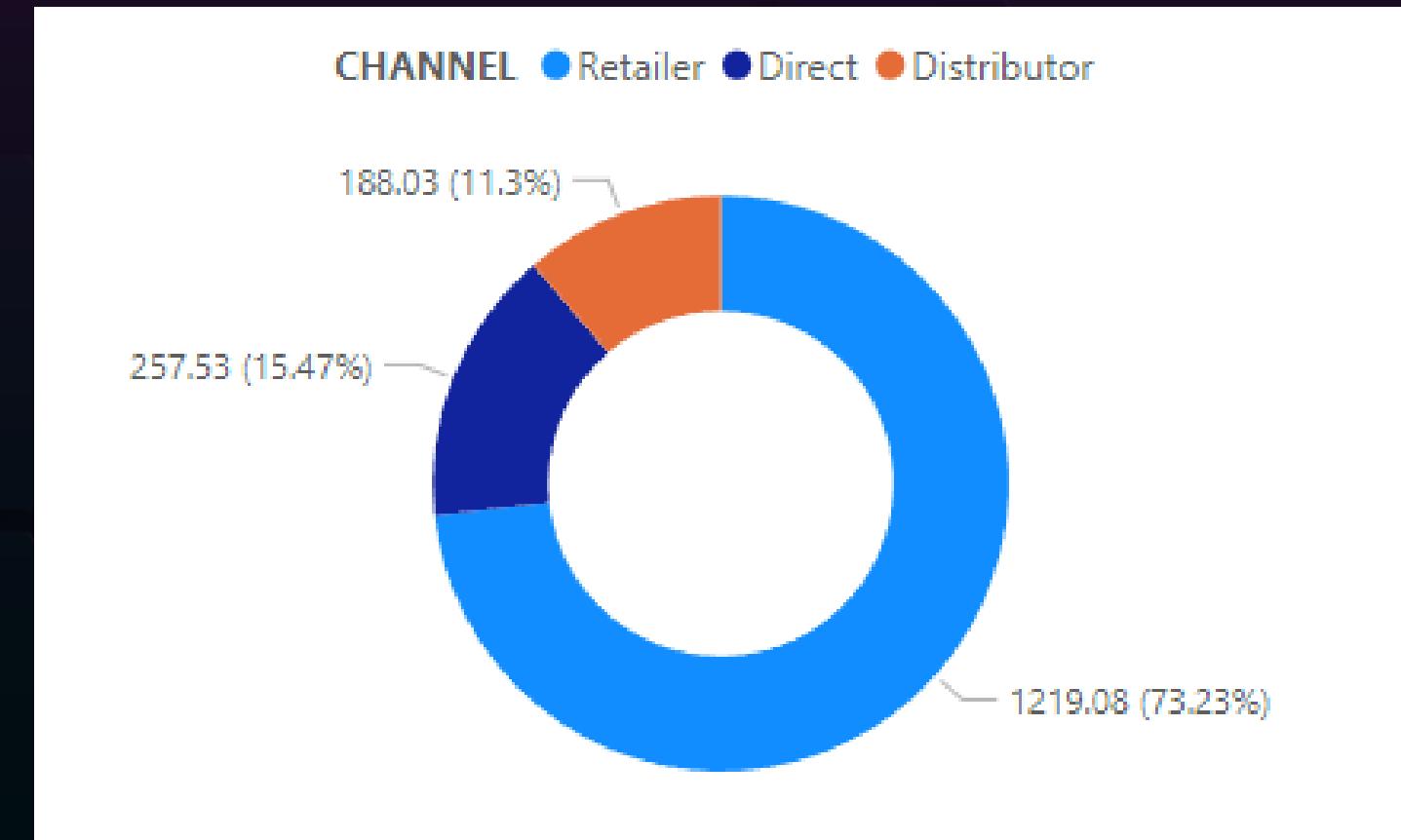
```
WITH CS_21 AS (
  SELECT C.CHANNEL ,
  ROUND(SUM(G.GROSS_PRICE * S.SOLD_QUANTITY)/1000000,2) AS GROSS_SALES_MLN
  FROM FACT_SALES_MONTHLY S
  INNER JOIN FACT_GROSS_PRICE G
  ON S.PRODUCT_CODE = G.PRODUCT_CODE AND
    S.FISCAL_YEAR = G.FISCAL_YEAR
  INNER JOIN DIM_CUSTOMER C
  ON S.CUSTOMER_CODE = C.CUSTOMER_CODE
  WHERE G.FISCAL_YEAR = 2021
  GROUP BY C.CHANNEL
  ORDER BY GROSS_SALES_MLN DESC
),
TS_21 AS (
  SELECT SUM(GROSS_SALES_MLN) AS TOTAL_GROSS_SALES_MLN
  FROM CS_21
)
SELECT C.* ,
  ROUND(C.GROSS_SALES_MLN *100 / T.TOTAL_GROSS_SALES_MLN, 2 ) AS PERCENTAGE
  FROM CS_21 C , TS_21 T;
```



AD-HOC REQUESTS OUTPUT & INSIGHTS



CHANNEL	GROSS_SALES_MLN	PERCENTAGE
Retailer	1219.08	73.23
Direct	257.53	15.47
Distributor	188.03	11.30



Insight -

- Majority of AtliQ's sales comes from retailers , accounting for a substantial 73.23% of the total gross sales.
- Direct and Distributor channel together contributes only 26.77% of the total sales.



AD-HOC REQUESTS OUTPUT & INSIGHTS



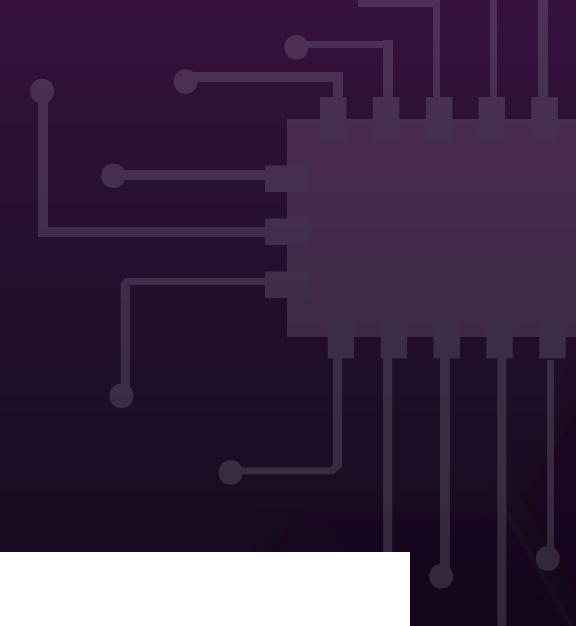
10. Get the Top 3 products in each division that have a high total_sold_quantity in the fiscal_year 2021? The final output contains these fields -
division, product_code, product, total_sold_quantity, rank_order

Ans -

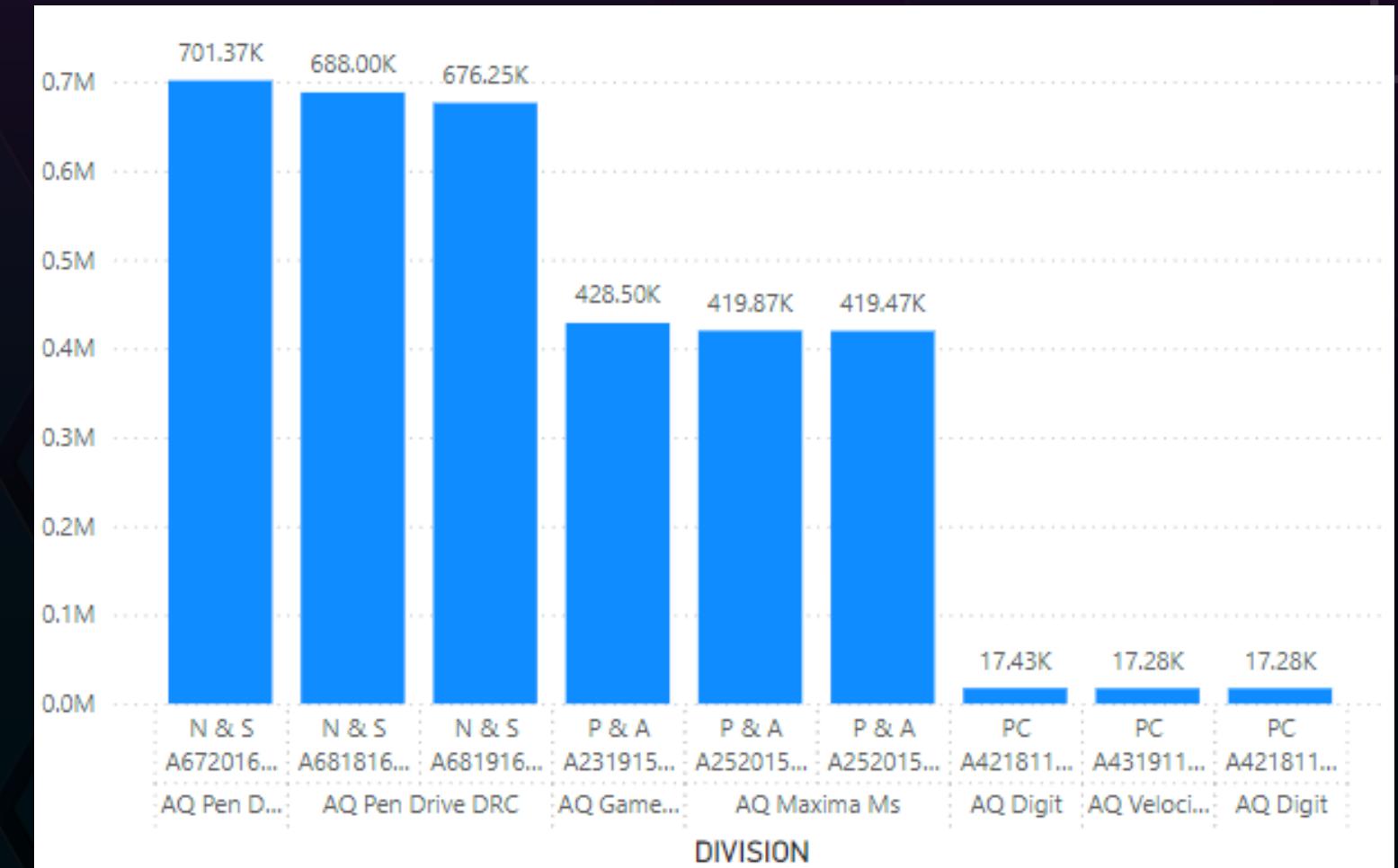
```
WITH CTE1 AS (
  SELECT P.DIVISION , P.PRODUCT_CODE , P.PRODUCT , SUM(S.SOLD_QUANTITY) AS TOTAL_SOLD_QTY
  FROM DIM_PRODUCT P
  INNER JOIN FACT_SALES_MONTHLY S
  ON P.PRODUCT_CODE = S.PRODUCT_CODE
  WHERE S.FISCAL_YEAR = 2021
  GROUP BY P.DIVISION , P.PRODUCT_CODE , P.PRODUCT
  ORDER BY TOTAL_SOLD_QTY DESC
),
CTE2 AS (
  SELECT * ,
    DENSE_RANK() OVER(PARTITION BY DIVISION ORDER BY TOTAL_SOLD_QTY DESC) AS RANK_ORDER
  FROM CTE1
)
SELECT * FROM CTE2
WHERE RANK_ORDER <= 3;
```



AD-HOC REQUESTS OUTPUT & INSIGHTS



DIVISION	PRODUCT_CODE	PRODUCT	TOTAL_SOLD_QTY	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 -

- In the N & S division ,Pen drive dominates the top three spot, showcasing their popularity and high sales performance.
- The P & A division's top three products are exclusively mouse, reflecting a clear dominance.
- The PC division's bestseller are all personal laptops.



RECOMMENDATION

- AtliQ should Strengthen their offerings in desktops, storage, and networking by addressing specific customer needs with reliable, tailored solutions.
- Implement consistent marketing strategies across online, offline, and in-store channels to maximize visibility and customer engagement.
- Offer competitive pricing paired with attractive discounts, bundles, and limited-time promotions to drive customer interest and loyalty.
- Continuously gather and analyze customer feedback to refine products, enhance services, and build long-term trust.
- Invest in targeted training programs to improve sales team skills, product knowledge, and customer interactions for better performance.



THANK YOU FOR WATCHING



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