

AD-HOC ANALYSIS

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thararayyan@gmail.com



www.linkedin.com/in/rayyanthara/



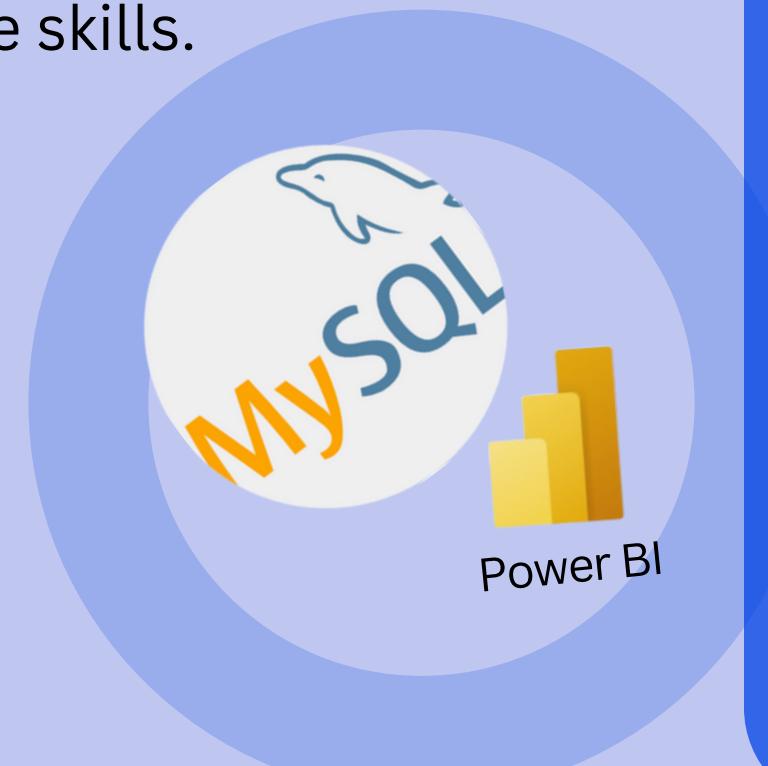
AtliQ Hardware

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

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.



Ad-Hoc Requests

1. Provide the list of markets in which customer "Atliq Exclusive" operates its business in the APAC region?
2. What is the percentage of unique product increase in 2021 vs. 2020?
3. Provide a report with all the unique product counts for each segment and sort them in descending order of product counts.
4. Follow-up: Which segment had the most increase in unique products in 2021 vs 2020?
5. Get the products that have the highest and lowest manufacturing costs.
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.
7. Get the complete report of the Gross sales amount for the customer “Atliq Exclusive” for each month
8. In which quarter of 2020, got the maximum total_sold_quantity?
9. Which channel helped to bring more gross sales in the fiscal year 2021 and the percentage of contribution?
10. Get the Top 3 products in each division that have a high total_sold_quantity in the fiscal_year 2021?

— INPUT —

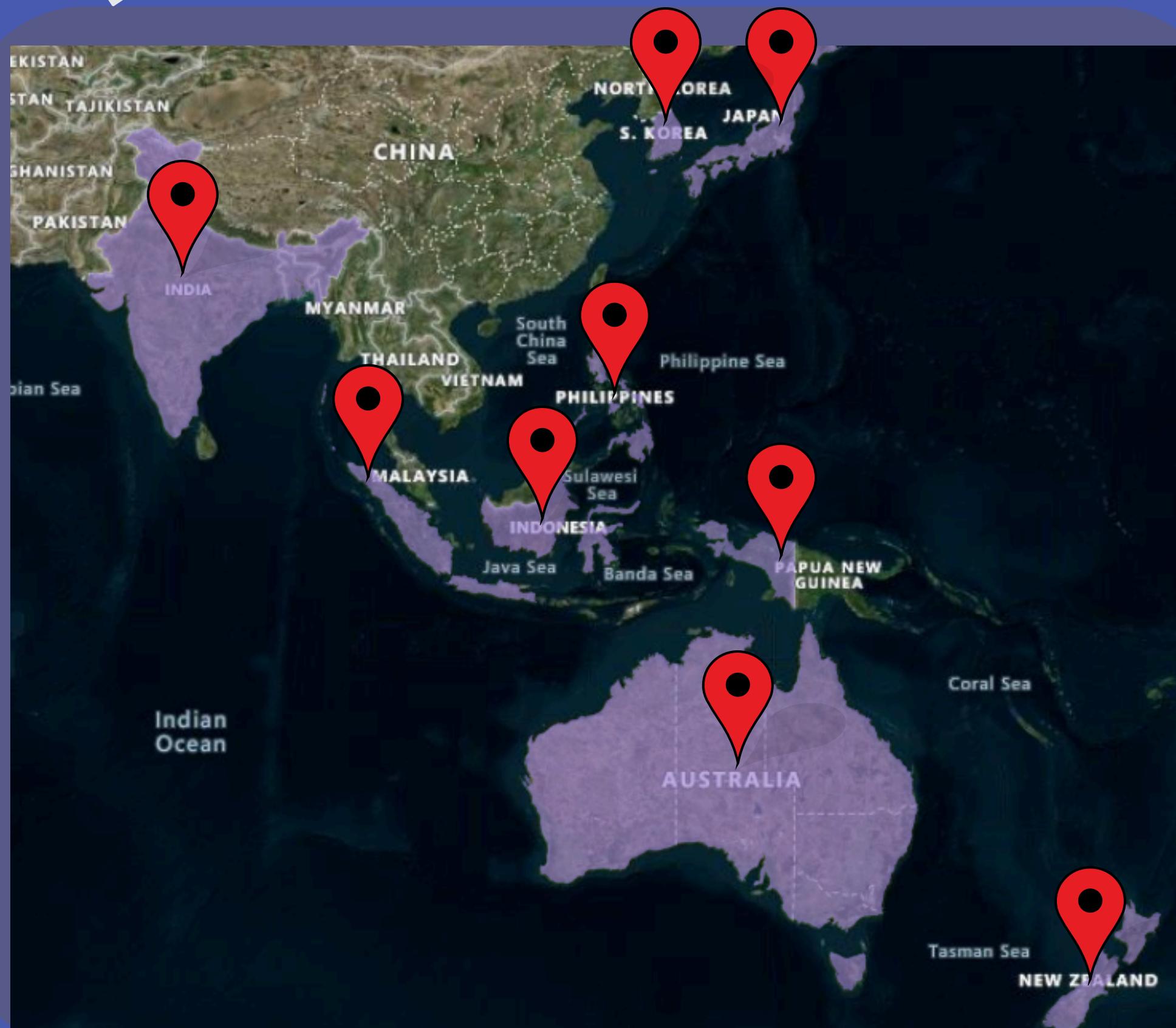
1. Provide the list of markets in which customer "Atliq Exclusive" operates its business in the APAC region.

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

OUTPUT

market	customer	region
India	Atliq Exclusive	APAC
Indonesia	Atliq Exclusive	APAC
Japan	Atliq Exclusive	APAC
Philippines	Atliq Exclusive	APAC
South Korea	Atliq Exclusive	APAC
Australia	Atliq Exclusive	APAC
Newzealand	Atliq Exclusive	APAC
Bangladesh	Atliq Exclusive	APAC

Insights



Australia

Bangladesh

India

Indonesia

Japan

Newzealand

Philiphines

South Korea

— INPUT —

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 upc as
  (SELECT distinct product_code,fiscal_year
  FROM fact_sales_monthly)
,
  upc2 as (
  SELECT
    (SELECT count(*) FROM upc
  WHERE fiscal_year = 2020) as
  unique_product_count_2020,
    (SELECT count(*) FROM upc
  WHERE fiscal_year = 2021) as
  unique_product_count_2021
)
  SELECT
unique_product_count_2020,
unique_product_count_2021,
round((unique_product_count_2021 -
unique_product_count_2020)*100/unique_product_count _2020,2) as pct_chg
  FROM upc2;
```

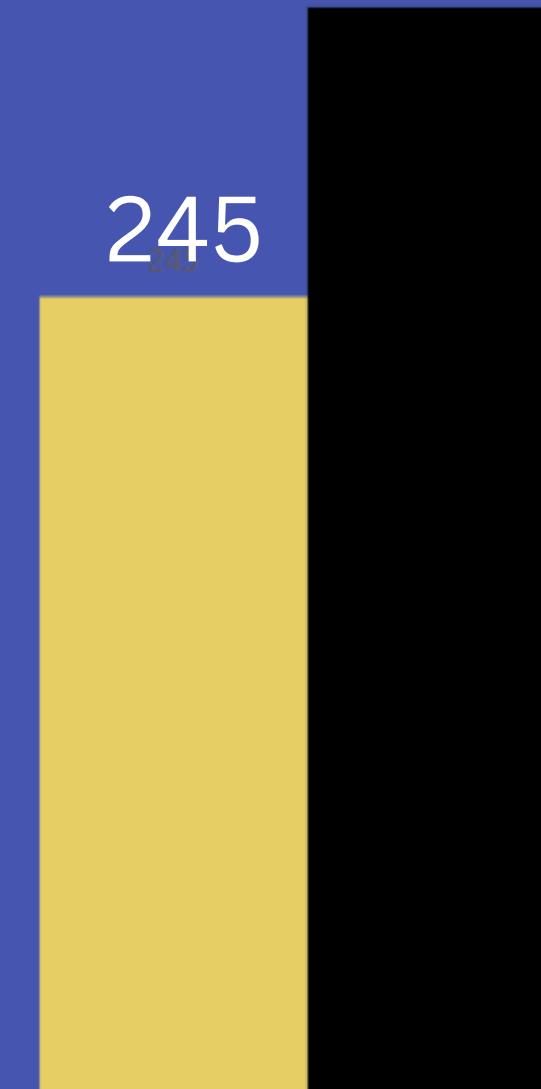
OUTPUT

unique_product_count_2020	unique_product_count_2021	pct_chg
245	334	36.33

Insights

335

245



36.33

Percentage change



● Unique_product_count_2020 ● Unique_product_count_2021



Increase in the number of unique products or introduction of new products indicates the growth and demand of AtliQ's Products

INPUT

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

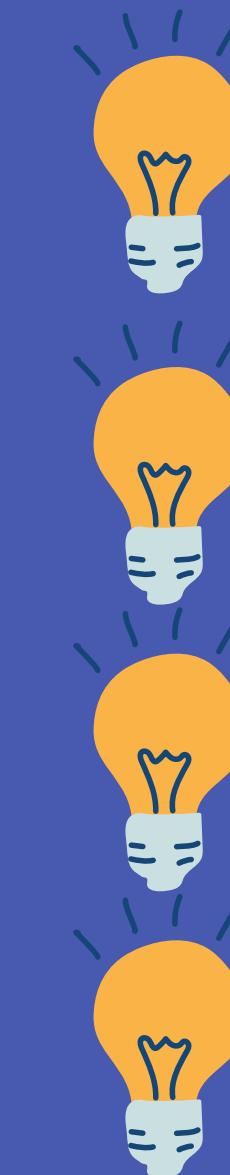
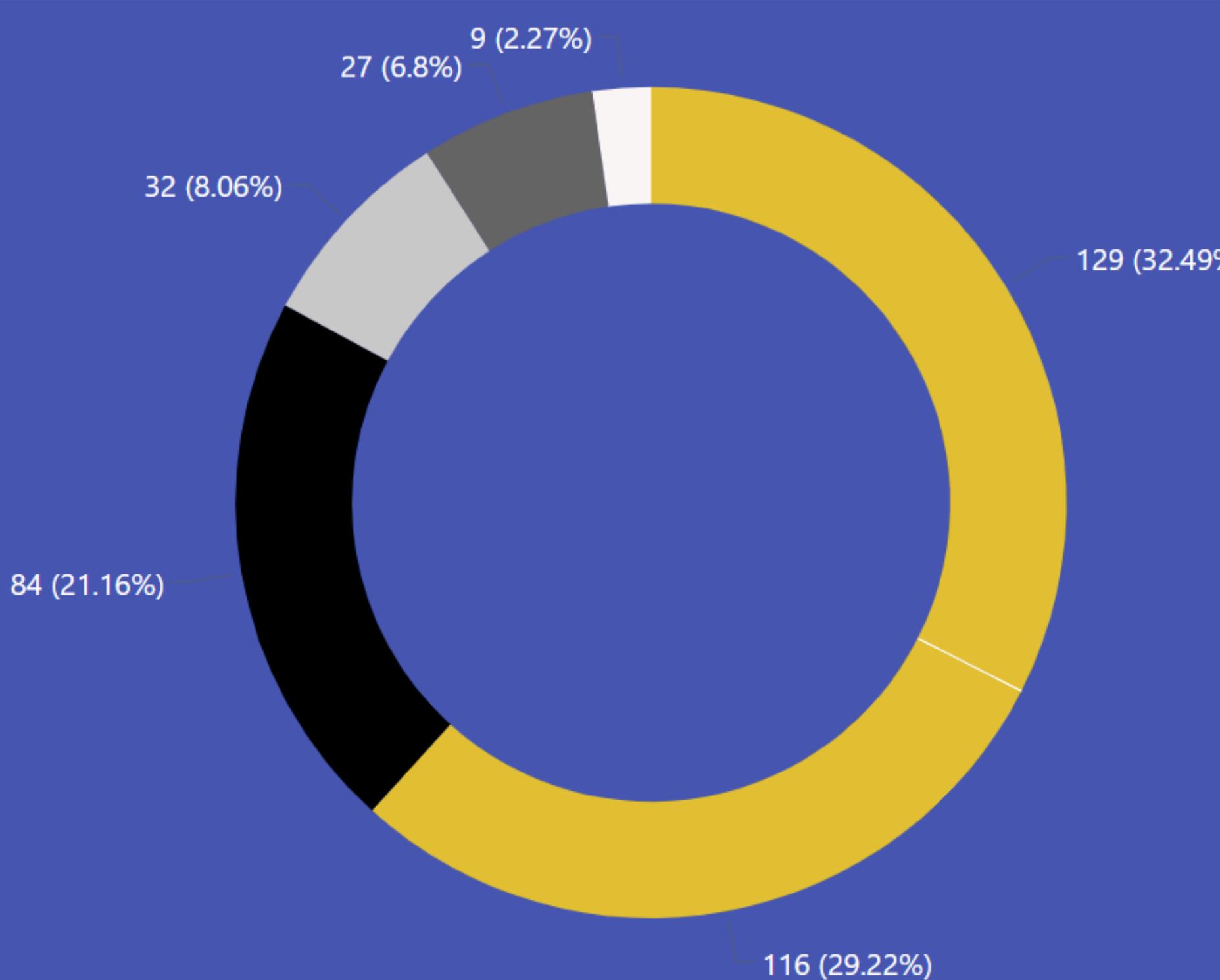
SELECT

```
    segment,  
    COUNT(product) 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



Notebook & Accessories consists of most number of Products. which indicates that there is a good demand for products of those 2 segments.

More than 60% of Products are from Notebook & Accessories together.

Desktop, Storage & Networking makes up 17.13% of the total products, which makes these segments with the lowest number of products.

Management should give some strategic promotional Offers & discounts inorder to sell more products from Desktop, Storage and Networking segments.

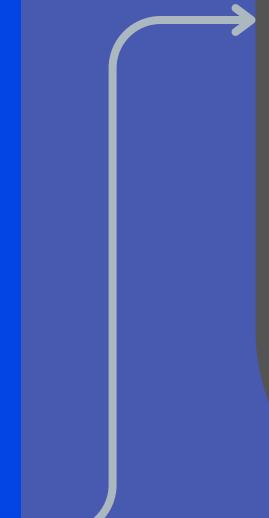
— INPUT —

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

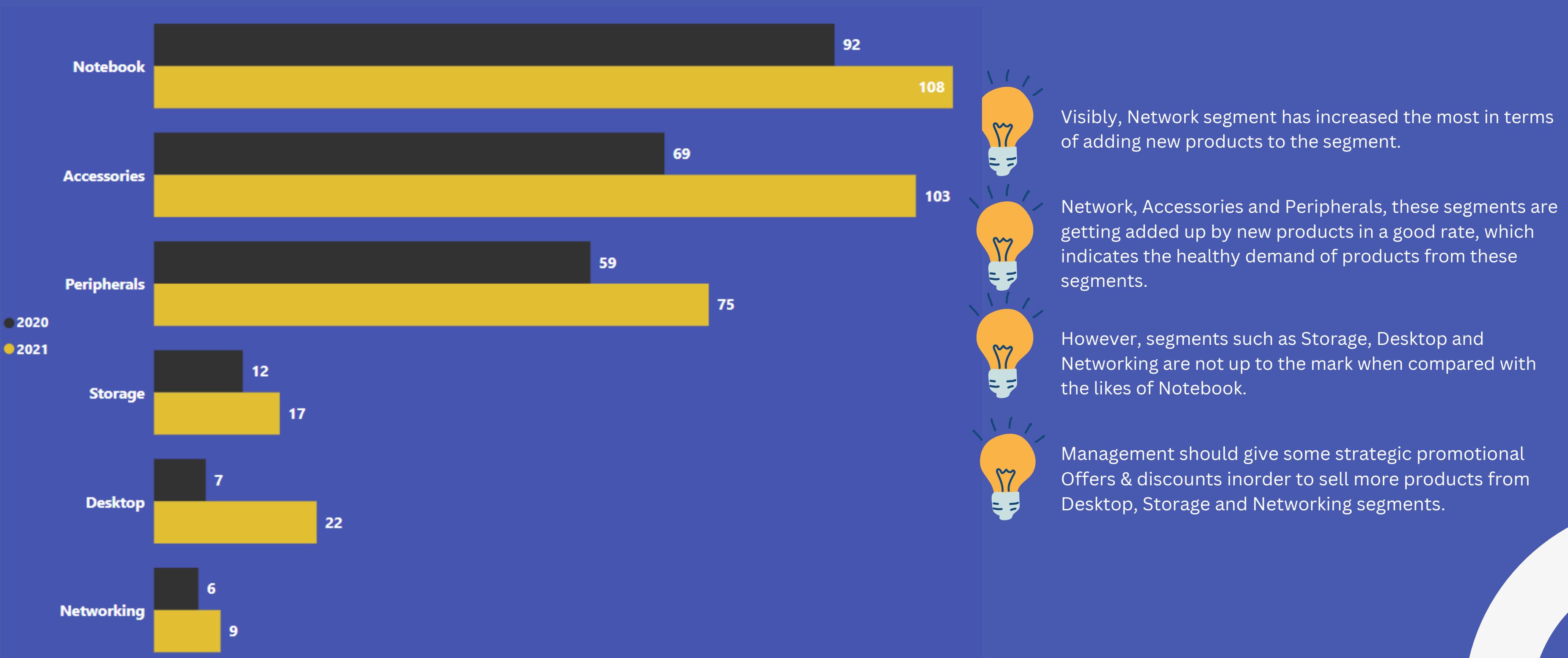
```
WITH ProductCounts AS (
    SELECT
        segment,
        SUM(CASE WHEN fiscal_year = 2020 THEN
1 ELSE 0 END) AS product_count_2020,
        SUM(CASE WHEN fiscal_year = 2021 THEN
1 ELSE 0 END) AS product_count_2021
    FROM dim_product
    JOIN fact_gross_price
    USING (product_code)
    GROUP BY segment
)
SELECT
    segment,
    product_count_2020,
    product_count_2021,
    (product_count_2021 - product_count_2020)
AS difference
FROM ProductCounts
ORDER BY difference DESC
```

OUTPUT



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

Insights



INPUT

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
    product_code, product,
manufacturing_cost
FROM
    fact_manufacturing_cost
JOIN
    dim_product USING (product_code)
WHERE
    manufacturing_cost = (SELECT
        MAX(manufacturing_cost)
    FROM
        fact_manufacturing_cost)
    OR manufacturing_cost = (SELECT
        MIN(manufacturing_cost)
    FROM
        fact_manufacturing_cost)
ORDER BY manufacturing_cost DESC
  
```

OUTPUT

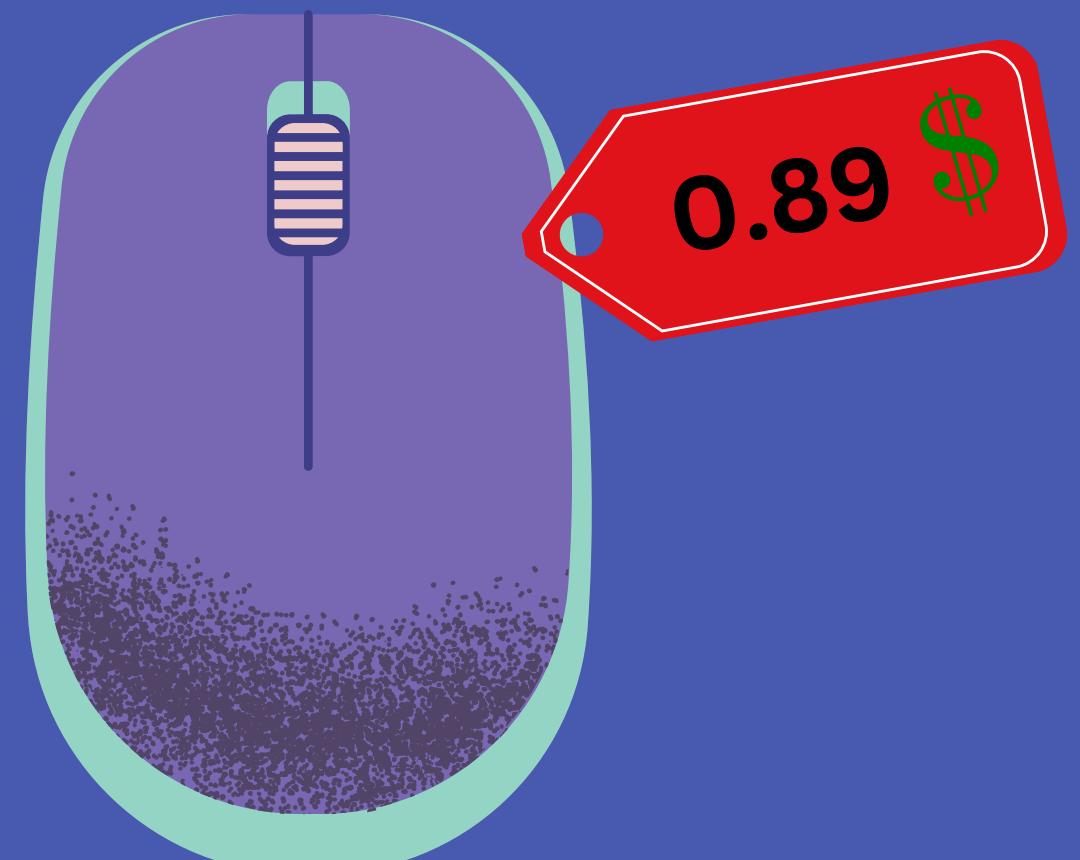
product_code	product	manufacturing_cost
A6120110206	AQ HOME Allin1 Gen 2	240.5364
A2118150101	AQ Master wired x1 Ms	0.8920

Insights

Product with the Highest manufacturing cost?



Product with the Lowest manufacturing cost?



— INPUT —

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

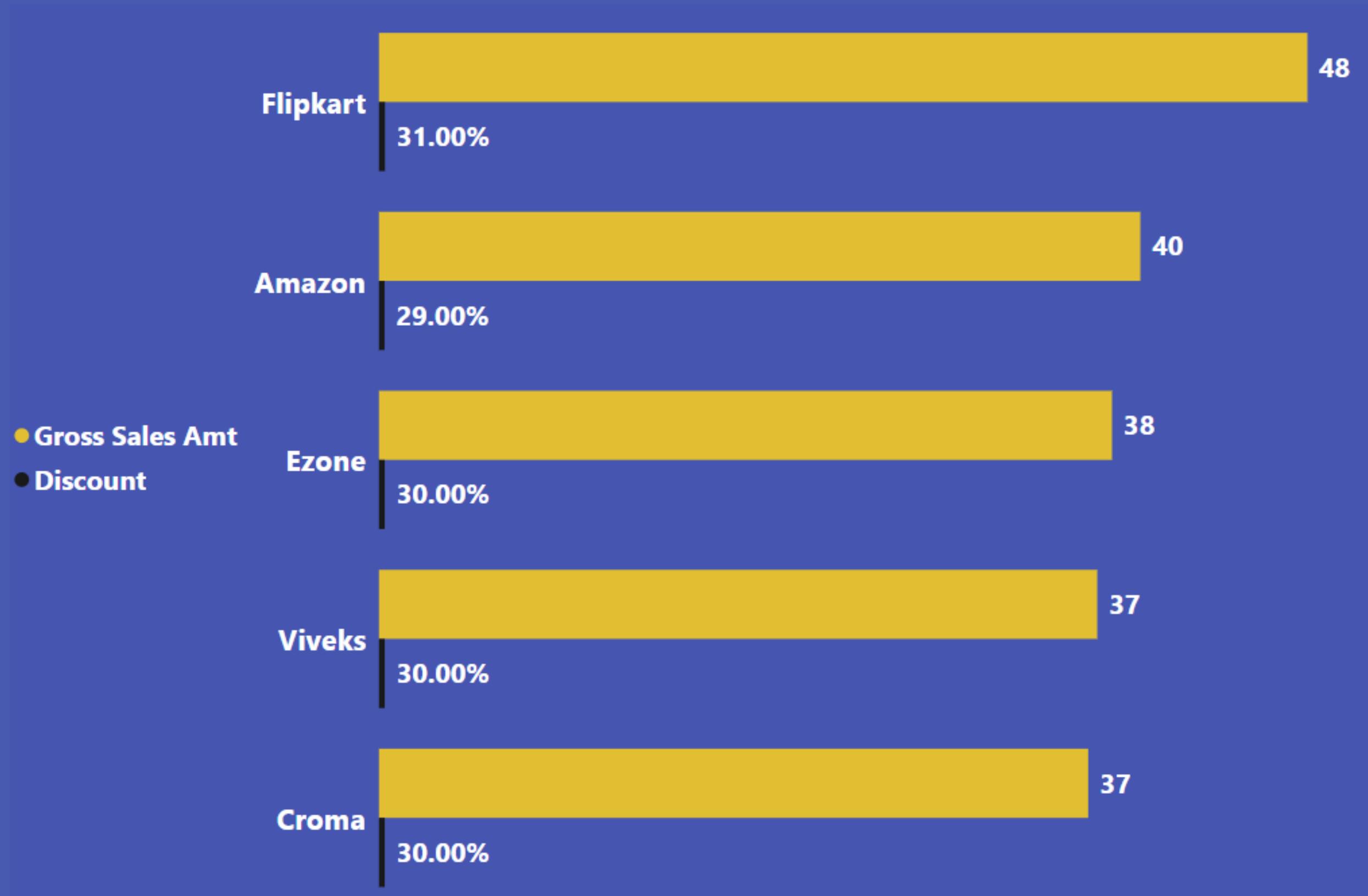
```

SELECT
    c.customer_code,
    c.customer,
    ROUND(AVG(d.pre_invoice_discount_pct)
    * 100, 2) AS avg_discount_pct
FROM
    dim_customer c
        JOIN
    fact_pre_invoice_deductions d USING
    (customer_code)
WHERE
    c.market = 'India'
        AND d.fiscal_year = 2021
GROUP BY c.customer_code , c.customer
ORDER BY avg_discount_pct DESC
LIMIT 5
  
```

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

Insights



Gross Sales contribution &
Discount received

— INPUT —

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:

- customer_code
- customer
- average_discount_percentage

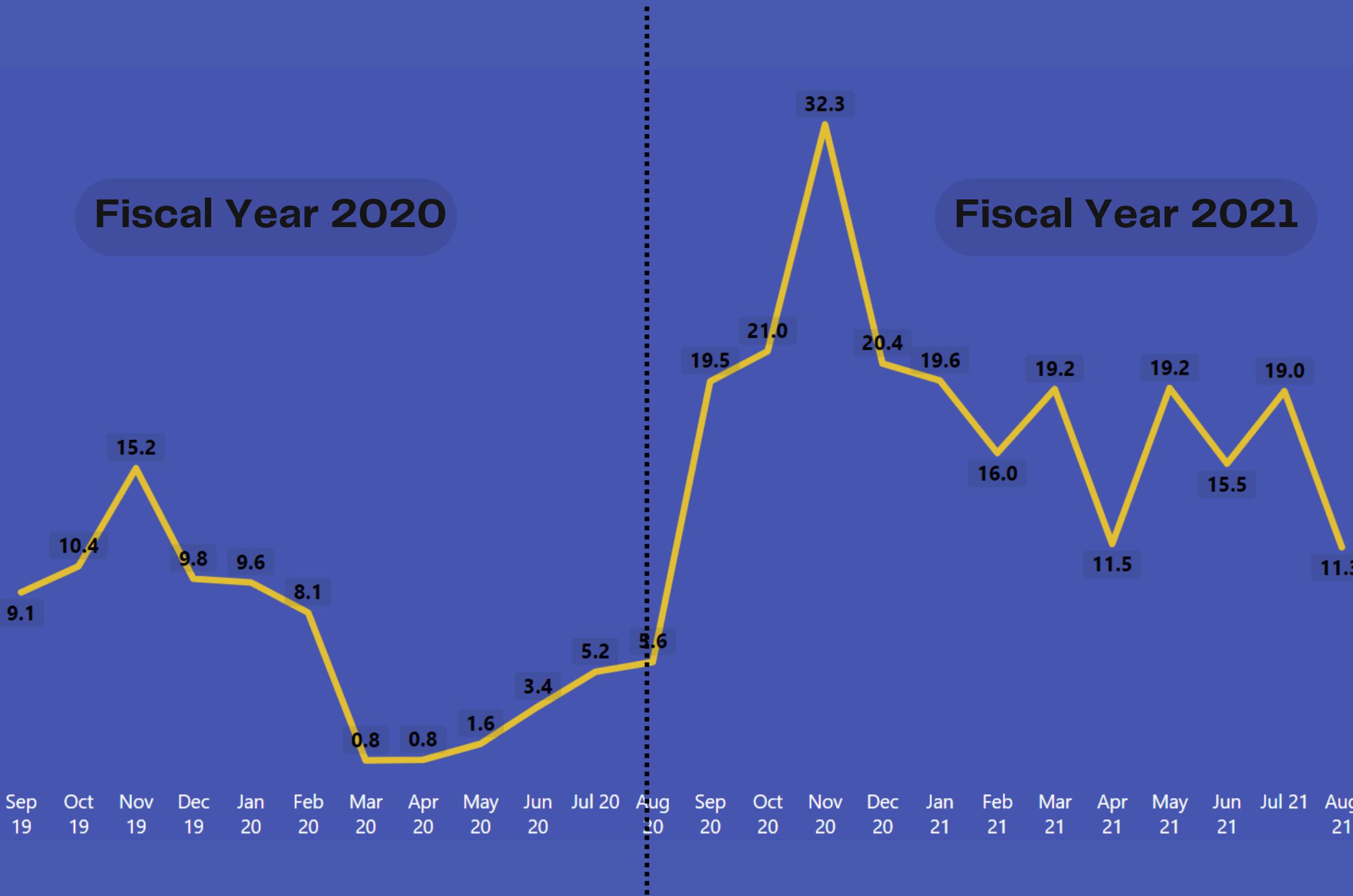
```

SELECT
    MONTHNAME(s.date) AS month,
    YEAR(s.date) AS year,
    CONCAT(ROUND(SUM(sold_quantity *
gross_price) / 1000000,
                2),
           'M') AS gross_sales_amount
FROM
    fact_gross_price g
        JOIN
    fact_sales_monthly s USING
(product_code)
        JOIN
    dim_customer c USING (customer_code)
WHERE
    customer = 'Atliq Exclusive'
GROUP BY month , year
  
```

OUTPUT

month	year	gross_sales_amount
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

Insights



Fiscal Year 2020

Fiscal Year 2021



In Fiscal Year 2021, AtliQ has tremendously increased its Gross Sales & stayed consisted with it in FY-2021.



In Fiscal Year 2020 March, there was a sudden decline in the Global Market due to COVID-19 which led to the sharp fall in Sales.



AtliQ recorded its highest Gross Sales in the month of November, both in FY-2020 & FY-2021.



The reason behind High Sales in the month of November is, The Diwali Festival which leads to many successfull promotional Offers and Schemes

INPUT

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

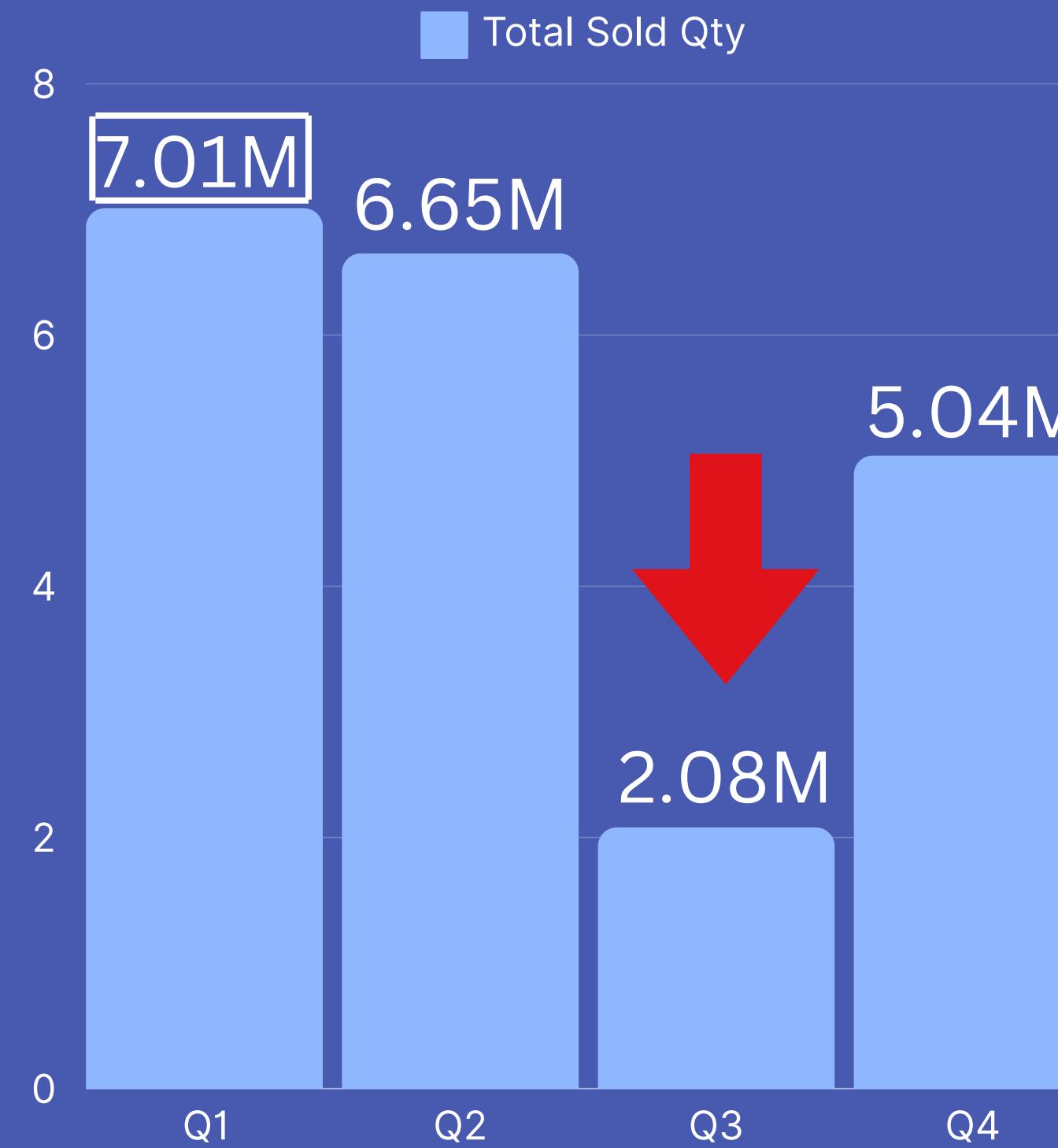
```

SELECT
    QUARTER(DATE_ADD(date, INTERVAL 4
MONTH)) AS quarter,
    CONCAT(ROUND(SUM(sold_quantity) /
1000000, 2),
        'M') AS
total_sold_quantity
FROM
    fact_sales_monthly
WHERE
    fiscal_year = 2020
GROUP BY quarter
ORDER BY total_sold_quantity DESC
  
```

OUTPUT

quarter	total_sold_quantity
1	7.01M
2	6.65M
4	5.04M
3	2.08M

Insights



In Fiscal Year 2020 Quarter 1 AtliQ has sold more units compared to all the other quarters in FY-2020.



AtliQ recorded a huge decline in the FY-2020 Quarter 3 to 2.08M units sold, due to the COVID Pandemic.



In Fiscal Year 2020 Quarter 4, AtliQ saw good recovery due to the reopening of Market and Educational institutions, which led to more sales.

INPUT

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,

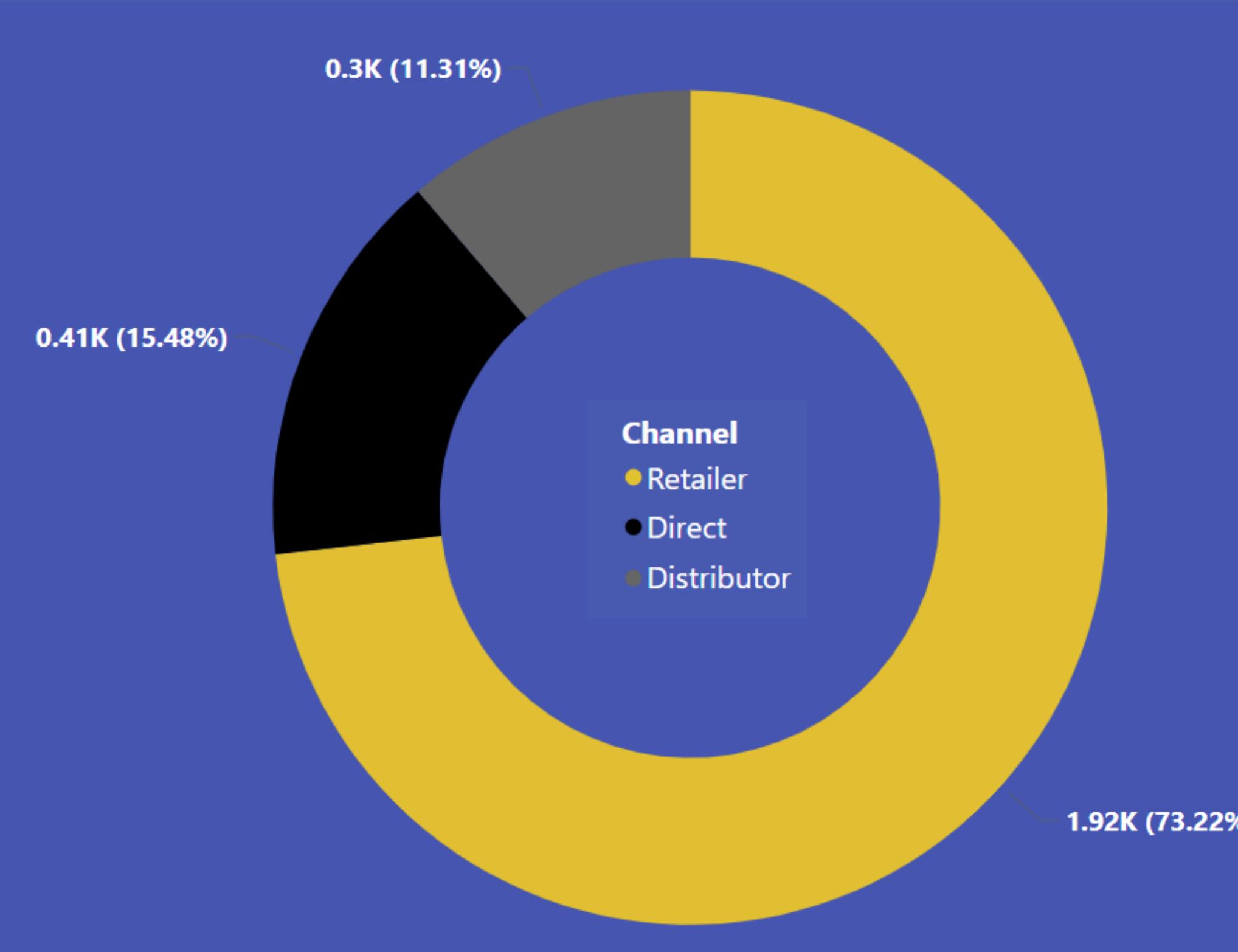
- channel
- gross_sales_mln
- percentage

```
WITH cte AS
(SELECT
    channel, ROUND(SUM(sold_quantity * gross_price)/1000000,2) AS gross_sales_mln
FROM
    dim_customer c
    JOIN
    fact_sales_monthly s USING (customer_code)
    JOIN
    fact_gross_price g USING (product_code)
WHERE
    s.fiscal_year = 2021
GROUP BY channel
ORDER BY gross_sales_mln desc
)
SELECT
*,,
CONCAT(ROUND((gross_sales_mln / SUM(gross_sales_mln)
OVER ()) * 100, 2),'%') AS percentage
FROM cte
GROUP BY channel,gross_sales_mln;
```

OUTPUT

channel	gross_sales_mln	percentage
Retailer	1924.17	73.22%
Direct	406.69	15.48%
Distributor	297.18	11.31%

Insights



The Retailer Channel has proven to generate the most number of Sales, Precisely 73.22% of Total Sales.



Both Direct & Distributor channels combined generate 26.79%, which is significantly less compared to Retailer channel

— INPUT —

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 cte AS
(SELECT
    division,
    product_code,
    product,
    SUM(sold_quantity) AS total_sold_quantity
FROM
    dim_product p
    JOIN
    fact_sales_monthly s USING (product_code)
WHERE
    fiscal_year = 2021
GROUP BY division , product_code , product)
```

```
,
```

```
cte2 AS
(SELECT
*, RANK() OVER(PARTITION BY division ORDER BY
total_sold_quantity DESC) AS rankk
FROM cte)
```

```
SELECT
*
FROM
    cte2
WHERE
    rankk <= 3
```

OUTPUT

division	product_code	product	total_sold_quantity	rankk
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

FOR YOUR ATTENTION

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thararayyan@gmail.com



www.linkedin.com/in/rayyanthara/

