



AD-HOC INSIGHTS

CONSUMER GOODS

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OBJECTIVE

- Atliq Hardware is a leading manufacturer of computer hardware in India and other nations, but it struggles to make prompt and wise choices based on data.
- The management intends to add more junior data analysts to the data analytics team.
- Tony Sharma, the head of data analytics, conducts a SQL challenge to identify applicants with both technical and soft skills.
- The Company Seeks Insights for 10 Ad-Hoc Requests

DATA REQUESTS AND TOOLS



Codebasics SQL Challenge

Requests:

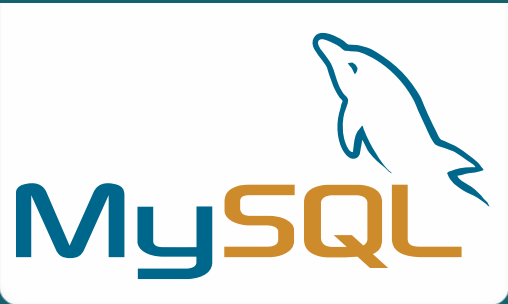
1. Provide the list of markets in which customer "Atliq Exclusive" operates its business in the APAC region.
2. What is the percentage of unique product increase in 2021 vs. 2020? The final output contains these fields,
unique_products_2020
unique_products_2021
percentage_chg
3. Provide a report with all the unique product counts for each segment and sort them in descending order of product counts. The final output contains 2 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 costs. The final output should contain these fields,
product_code
product
manufacturing_cost

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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 "**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
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_mln
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

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Canva



Q1) Provide the list of markets in which customer "Atliq Exclusive" operates its business in the APAC region.



```
SELECT DISTINCT
  market
FROM
  gdb023.dim_customer
WHERE
  region = 'APAC'
  AND customer = 'Atliq Exclusive';
```

- India
- Indonesia
- Japan
- Philippines
- South Korea
- Australia
- New Zealand
- Bangladesh

**“Atliq Exclusive”
Operates its business
in over 8 countries in
APAC Region**



India



South Korea



Indonesia



Australia



Japan



New Zealand



Philippines



Bangladesh

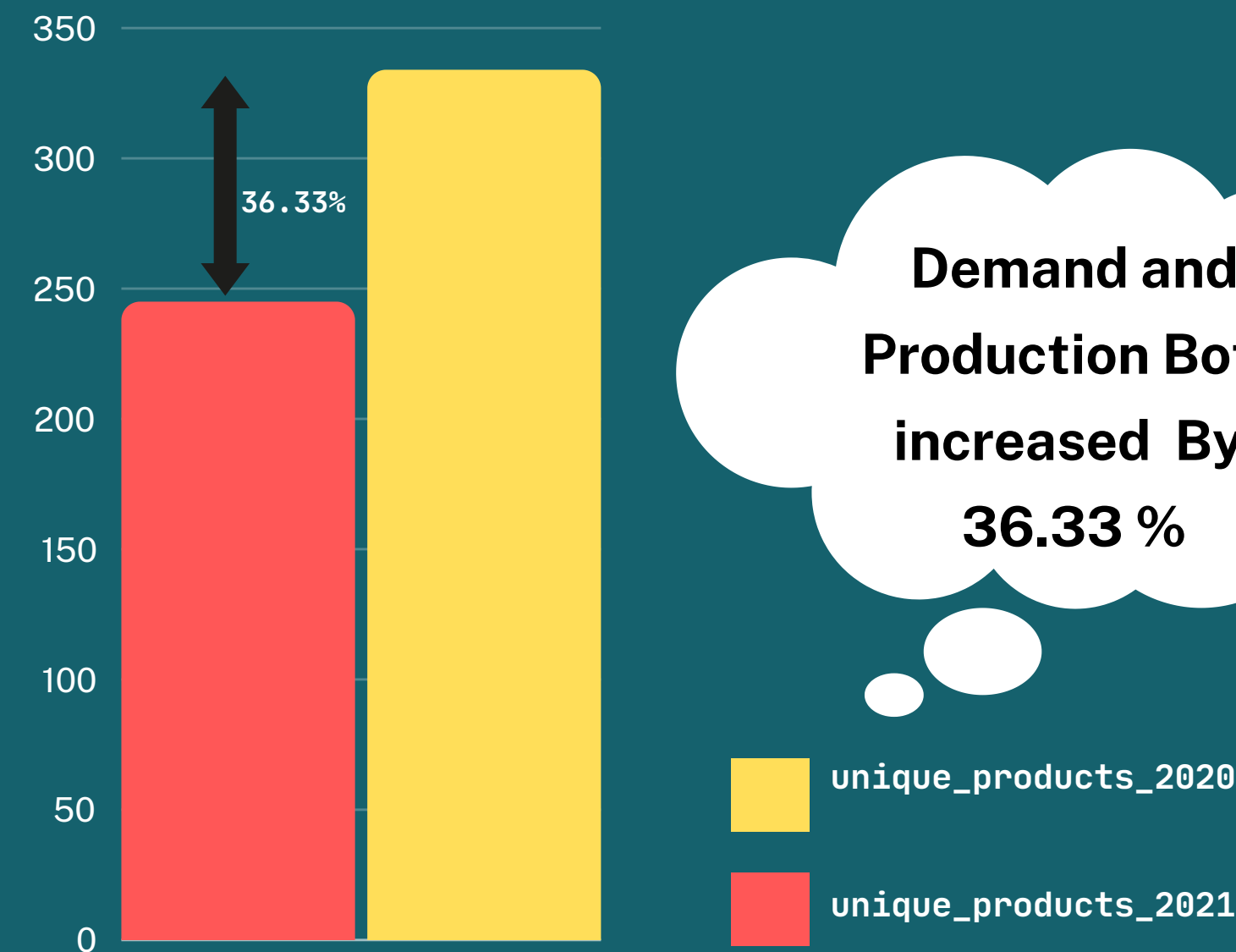
Q2) What is the percentage of unique product increase in 2021 vs. 2020?



```
with cte as
  (SELECT
    COUNT(DISTINCT product_code) AS unique_products_2020
  FROM
    fact_sales_monthly
  WHERE
    fiscal_year = 2020),

  cte1 as
  (SELECT
    COUNT(DISTINCT product_code) AS unique_products_2021
  FROM
    fact_sales_monthly
  WHERE
    fiscal_year = 2021)

SELECT
  cte.*,
  cte1.*,
  ROUND((unique_products_2021 - unique_products_2020) /
unique_products_2020,
        2) * 100 AS percentage_chng
FROM
  cte
  CROSS JOIN
  cte1
```



Demand and Production Both increased By 36.33 %

unique_products_2020	unique_products_2021	percentage_chng
245	334	36.33%

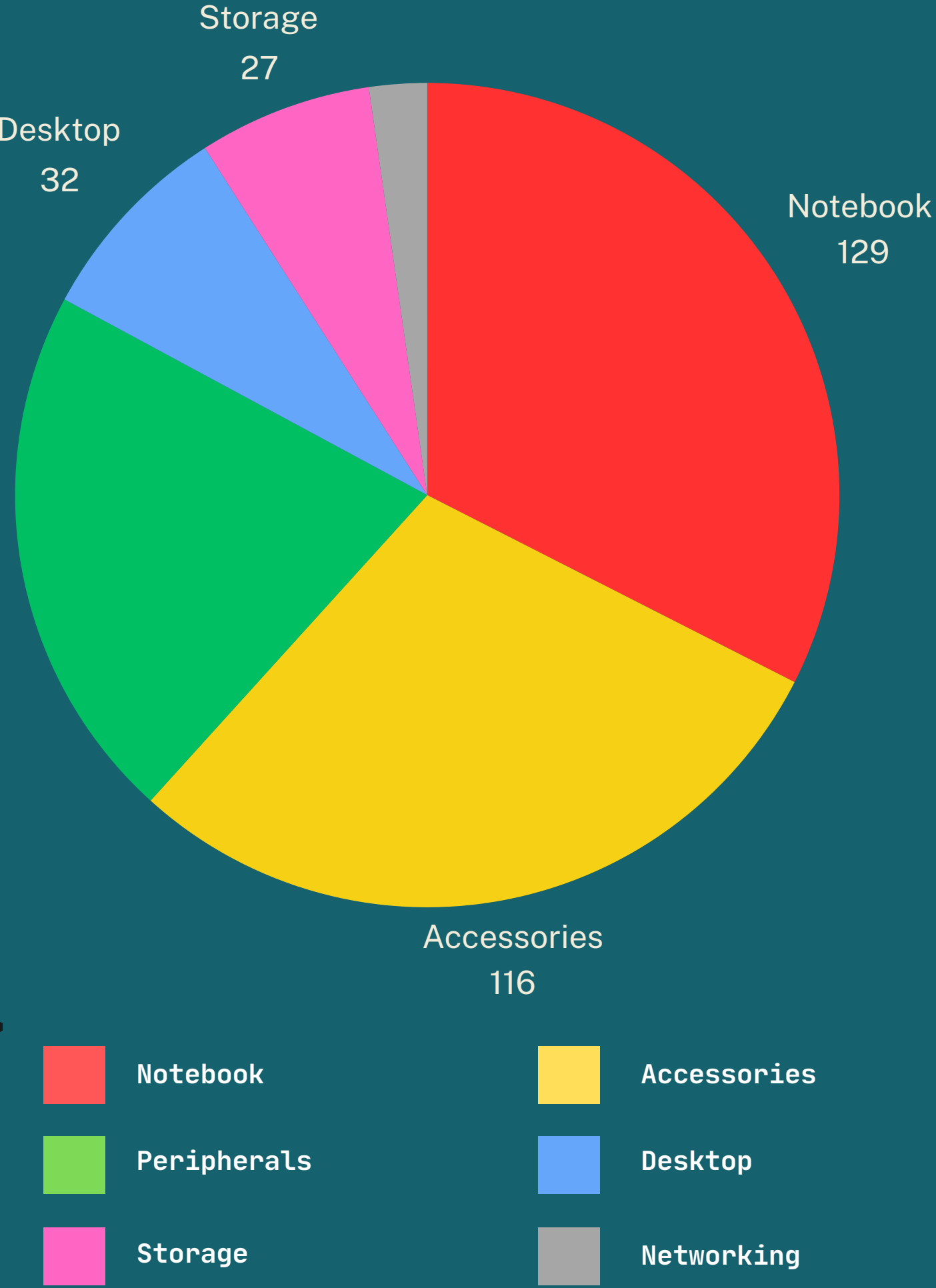
Q3) Provide a report with all the unique product counts for each segment and sort them in descending order of product counts.



```
SELECT DISTINCT
    COUNT(product_code) AS Product_count , segment
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

Notebook
Accessories and Peripherals
constitutes 83% towards the
total manufactured product

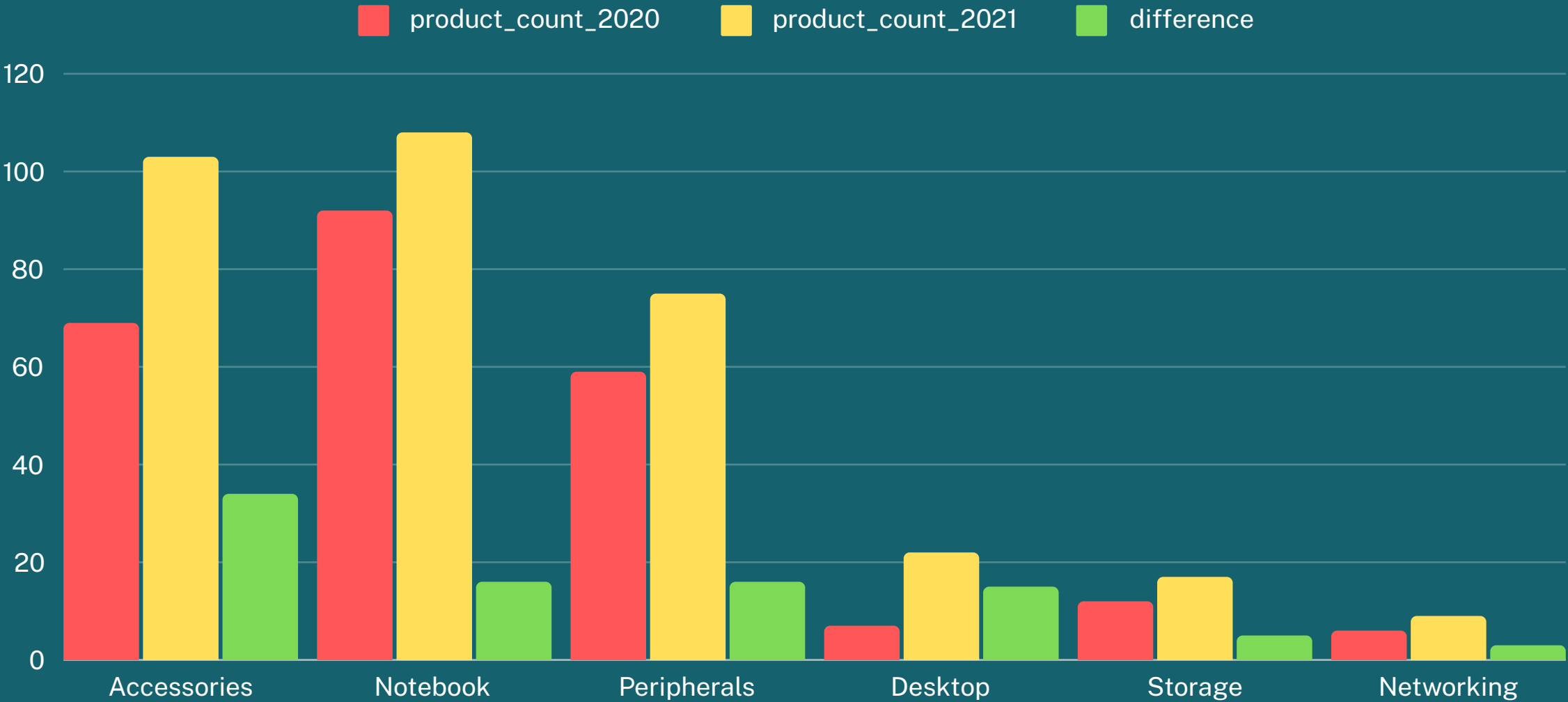


Q4) Follow-up: Which segment had the most increase in unique products in 2021 vs 2020?



```
with cte as
  (SELECT
    COUNT(DISTINCT p.product_code) AS Product_count_2020,
    segment,
    fiscal_year
  FROM
    dim_product p
    JOIN
    fact_sales_monthly s ON p.product_code = s.product_code
  WHERE
    fiscal_year = 2020
  GROUP BY segment , fiscal_year),
  cte1 as
  (SELECT
    COUNT(DISTINCT p.Product_code) AS Product_count_2021,
    segment,
    fiscal_year
  FROM
    dim_product p
    JOIN
    fact_sales_monthly s ON p.product_code = s.product_code
  WHERE
    fiscal_year = 2021
  GROUP BY segment , fiscal_year)

SELECT
  segment,
  product_count_2020,
  product_count_2021,
  (product_count_2021 - product_count_2020) AS difference
FROM
  cte
  JOIN
  cte1 USING (segment)
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

Accessories had the largest increase in production

Q5) Get the products that have the highest and lowest manufacturing costs.



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

product_code	product	manufacturing_cost
A6120110206	AQ HOME All in1 Gen 2	240.5364
A2118150101	AQ Master wired x1 Ms	0.892

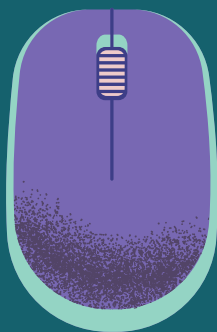
Highest Manufacturing Cost



AQ HOME Allin1 Gen 2
Personal Desktop
(240.5364)

Desktop : AQ Home All in 1 Gen 2 Personal Desktop has the Highest Manufacturing Cost.

Lowest Manufacturing Cost



AQ Master wired x1 Ms
Mouse
(0.892)

Mouse : AQ Master Wired x1 Ms has the lowest Manufacturing Cost.

Q6) 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.



```
SELECT
  customer_code,
  customer,
  pre_invoice_discount_pct AS average_discount_percentage
FROM
  fact_pre_invoice_deductions d
  JOIN
  dim_customer c USING (customer_code)
WHERE
  d.fiscal_year = 2021
  AND c.market = 'India'
ORDER BY average_discount_percentage DESC
LIMIT 5
```

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



Flipkart
30.83 %



Viveks
30.38 %



Ezone
30.28 %



Croma
30.25 %



Amazon
29.33 %

Flipkart Got
the Highest
Pre Invoice Discount

Amazon Got
the Least
Pre Invoice Discount

Q7) 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.



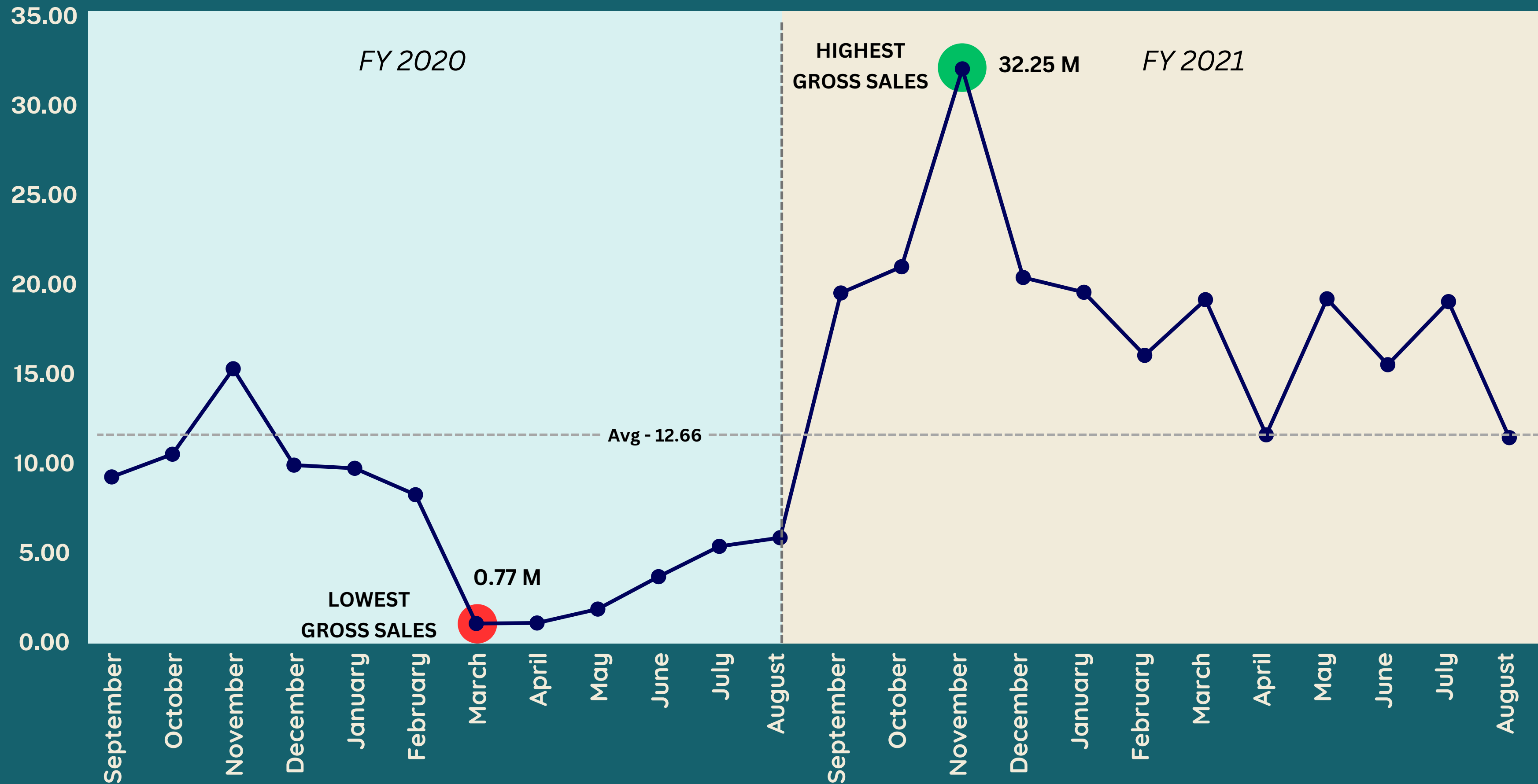
```
with cte as (  
  SELECT  
    s.*, c.customer, g.gross_price  
  FROM  
    fact_sales_monthly s  
    JOIN  
    dim_customer c on s.customer_code =  
    c.customer_code  
    JOIN  
    fact_gross_price g on s.product_code =  
    g.product_code  
)  
SELECT  
  MONTH(date) AS month_name,  
  YEAR(Date) AS yr,  
  ROUND(SUM(gross_price * sold_quantity), 2)  
AS Gross_sales_amount  
FROM  
  cte  
WHERE  
  customer = 'Atliq Exclusive'  
GROUP BY month_name , Yr
```

month_name	month	yr	Gross_sales_amo unt
9	September	2019	9.09
10	October	2019	10.38
11	November	2019	15.23
12	December	2019	9.76
1	January	2020	9.58
2	February	2020	8.08
3	March	2020	0.77
4	April	2020	0.80
5	May	2020	1.59
6	June	2020	3.43
7	July	2020	5.15
8	August	2020	5.64
9	September	2020	19.53
10	October	2020	21.02
11	November	2020	32.25
12	December	2020	20.41
1	January	2021	19.57
2	February	2021	15.99
3	March	2021	19.15
4	April	2021	11.48
5	May	2021	19.20
6	June	2021	15.46
7	July	2021	19.04
8	August	2021	11.32

The Lowest Gross Margin for FY 2020 was during March and for FY 2021 was during August

The Highest Gross Margin for FY 2020 and FY 2021 was during November

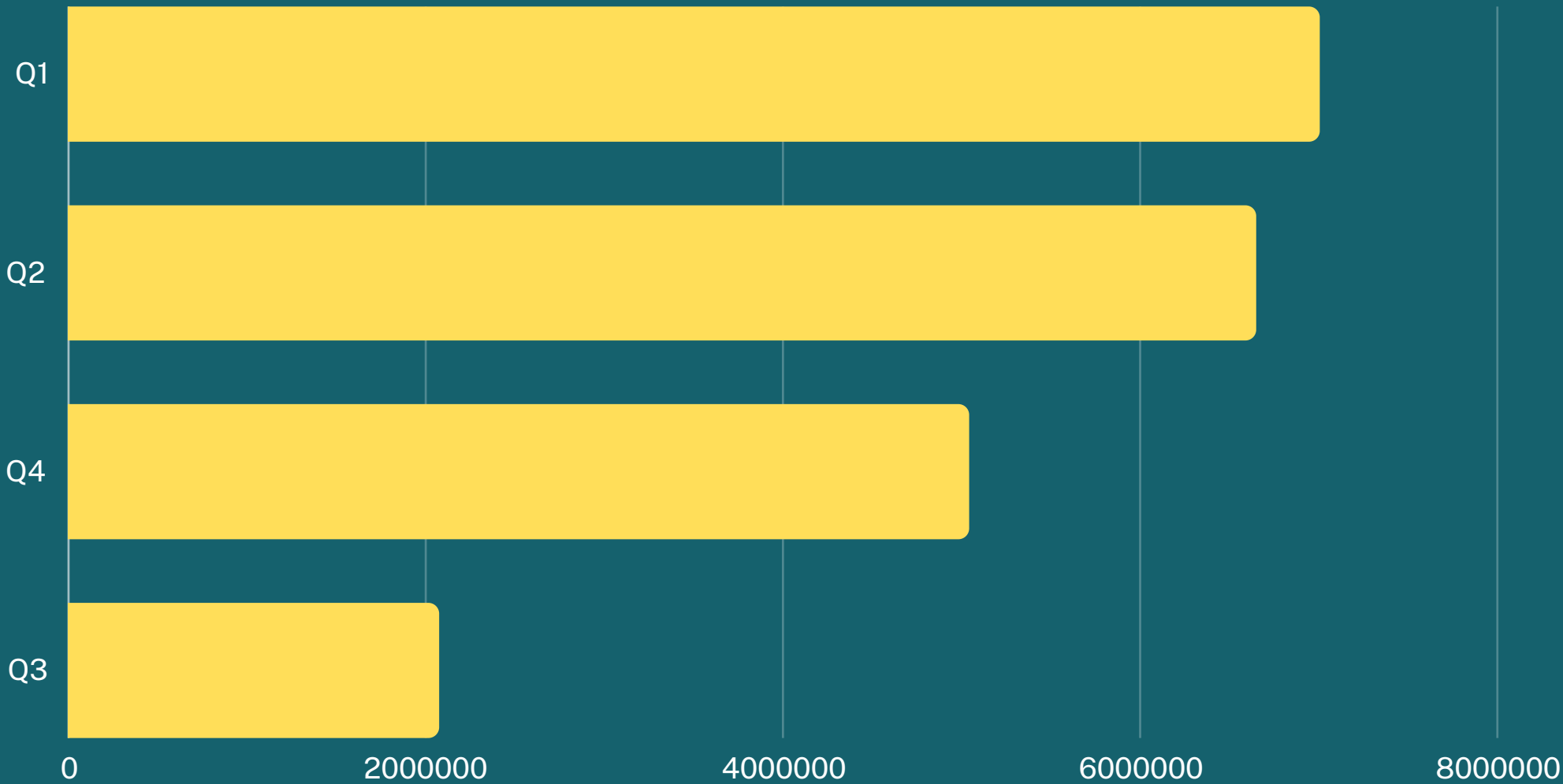
FY 2021 Saw an Increase of 183% in the Gross Margin as compared to FY 2020



Q8) In which quarter of 2020, got the maximum total_sold_quantity?



```
with cte as (  
    SELECT  
        *,  
        CONCAT('Q',  
            CEILING(MONTH(DATE_ADD(date,  
INTERVAL 4 MONTH)) / 3)) AS Quarter  
FROM  
    fact_sales_monthly)  
SELECT  
    Quarter, SUM(sold_quantity) AS  
total_sold_quantity  
FROM  
    cte  
WHERE  
    fiscal_year = 2020  
GROUP BY quarter  
ORDER BY total_sold_quantity DESC
```



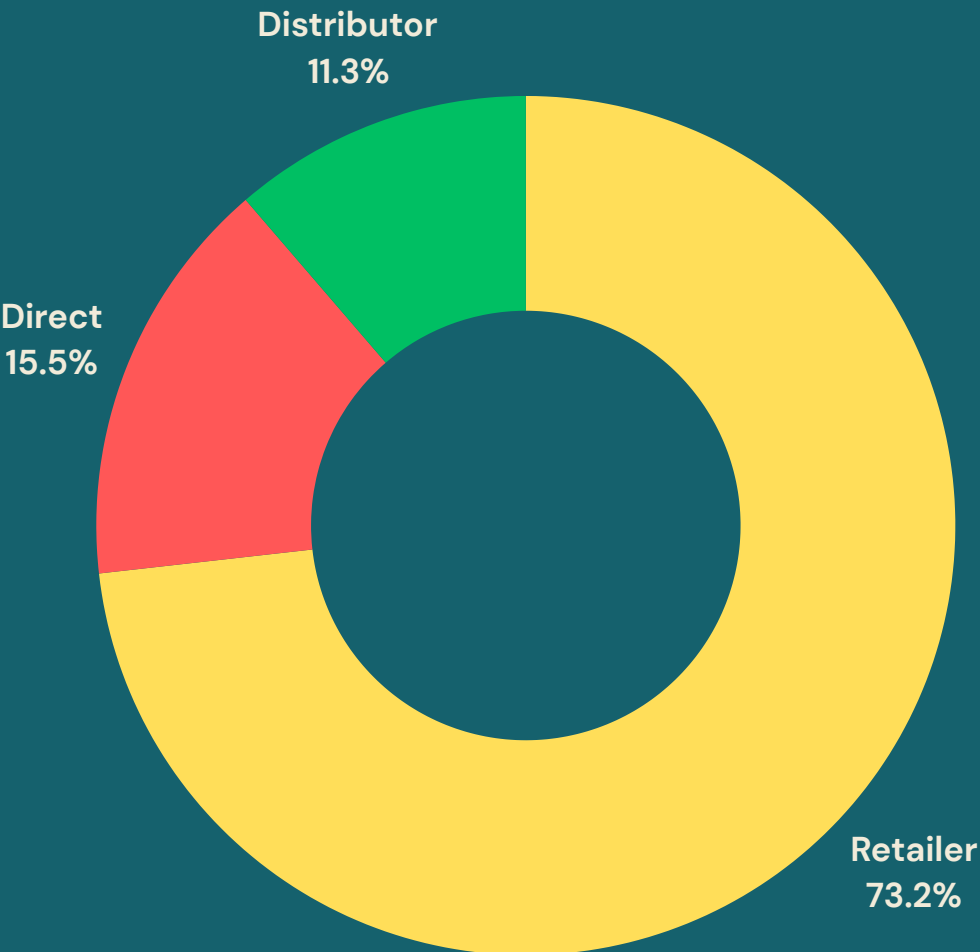
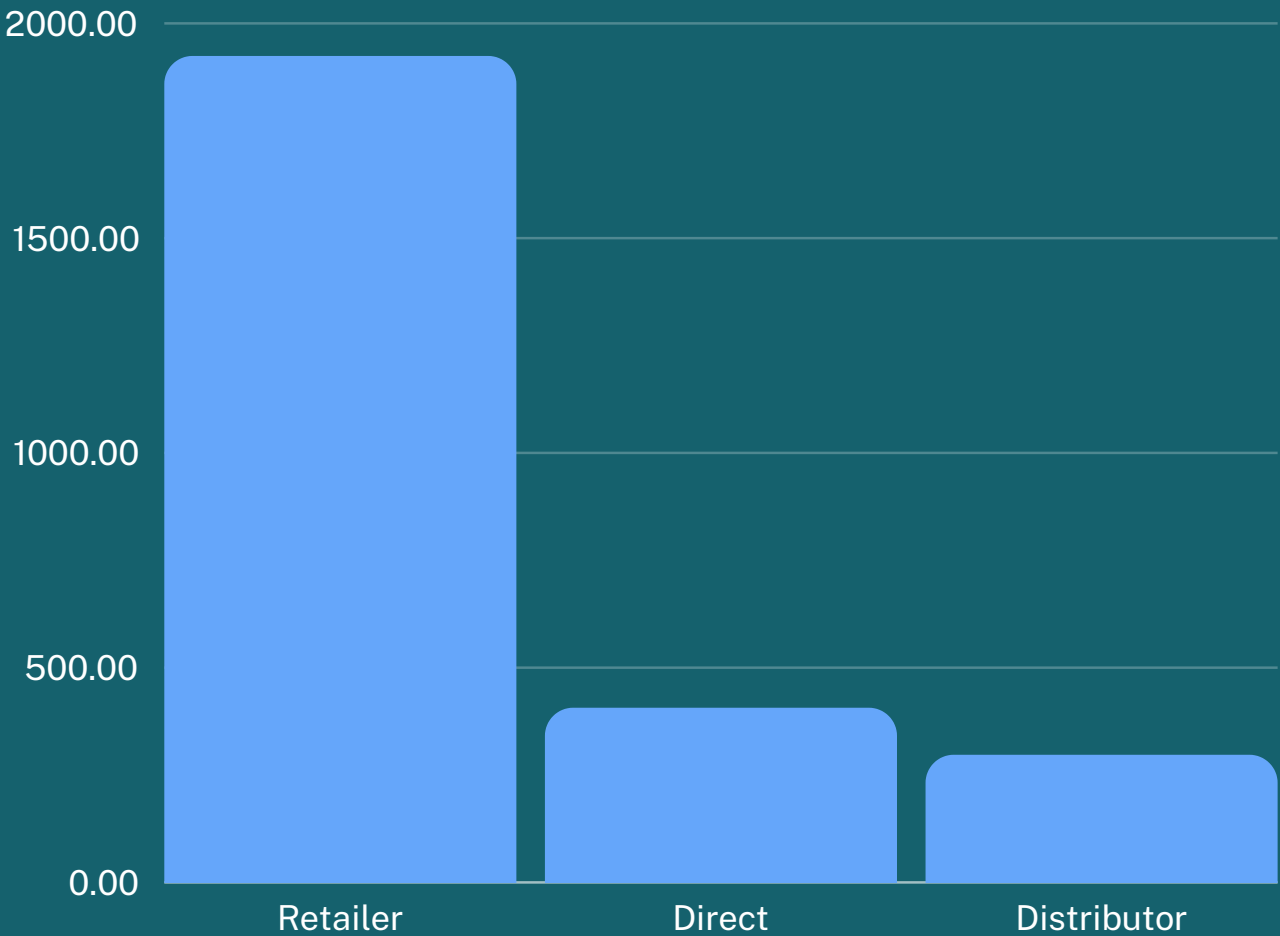
Quarter	total_sold_quantity
Q1	7005619
Q2	6649642
Q4	5042541
Q3	2075087

Q1 had the Highest
Total Sold Quantity in
2020 followed By Q2
whereas Q4 and Q3
did not perform Well

Q9) Which channel helped to bring more gross sales in the fiscal year 2021 and the percentage of contribution?



```
with cte1 as (with cte as (  
SELECT  
    s.*, c.channel, g.gross_price  
FROM  
    fact_sales_monthly s  
    JOIN  
    dim_customer c on s.customer_code =  
c.customer_code  
    JOIN  
    fact_gross_price g on s.product_code =  
g.product_code  
) SELECT  
    channel,  
    ROUND(SUM(sold_quantity * gross_price) /  
1000000,  
2) AS Gross_sales_mln  
FROM  
    cte  
WHERE  
    fiscal_year = 2021  
GROUP BY channel)  
SELECT * ,  
Round((gross_sales_mln/sum(gross_sales_Mln)  
Over ())*100,2) AS percentage FROM cte1  
GROUP BY channel  
ORDER BY percentage DESC
```



channel	Gross_sales_mln	percentage
Retailer	1924.17	73.22
Direct	406.69	15.48
Distributor	297.18	11.31

Retail Channel Brought the Highest Gross Sales Contributing to 73.22 % of the Total Gross Sales whereas the Distributor Channel Did Not perform that well

Q9) Get the Top 3 products in each division that have a high total_sold_quantity in the fiscal_year 2021?

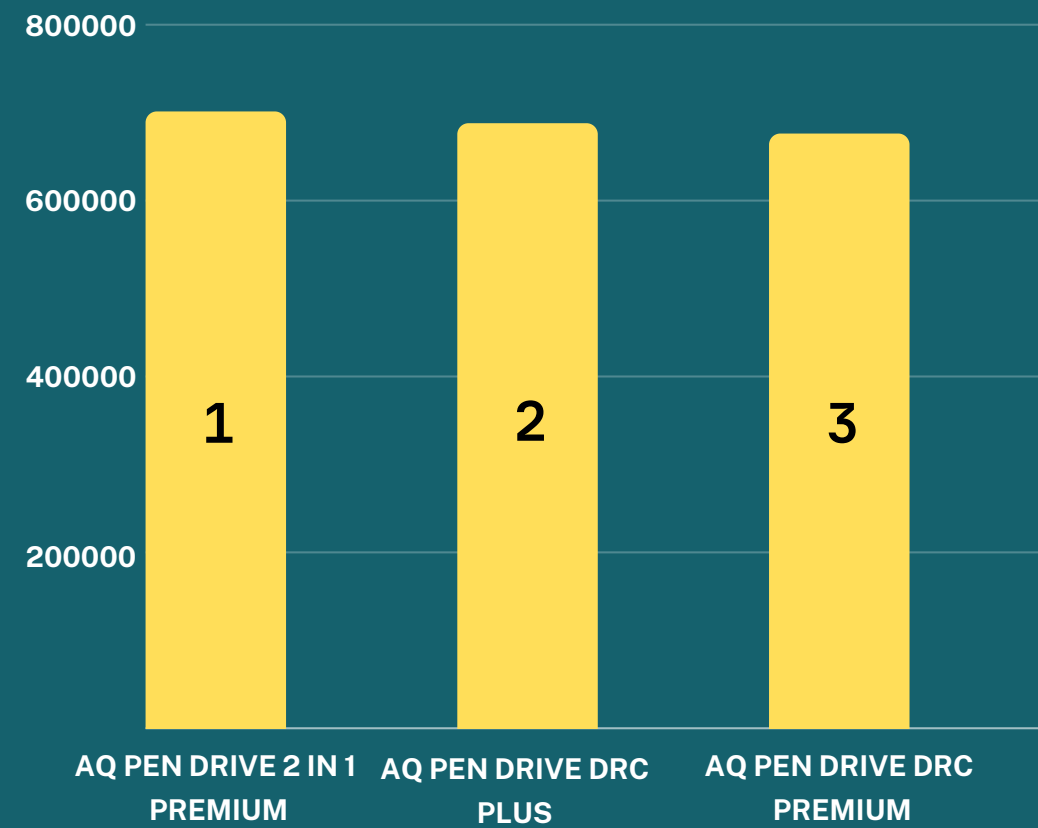


```
WITH CTE2 AS (  
  with CTE1 AS(  
    with CTE AS (SELECT  
      p.division, p.product_code, p.product,  
      s.sold_quantity  
    FROM  
      fact_sales_monthly s  
      JOIN  
      dim_product p USING (Product_code)  
    WHERE  
      fiscal_year = 2021)  
    SELECT  
      division,  
      product_code,  
      product,  
      SUM(sold_quantity) AS total_sold_quantity  
    FROM  
      cte  
    GROUP BY division , product_code , product )  
    SELECT * , RANK() OVER (PARTITION BY  
      DIVISION ORDER BY TOTAL_SOLD_QUANTITY DESC)  
    AS RANK_ORDER FROM CTE1)  
  SELECT * FROM CTE2  
  WHERE rank_order <=4
```

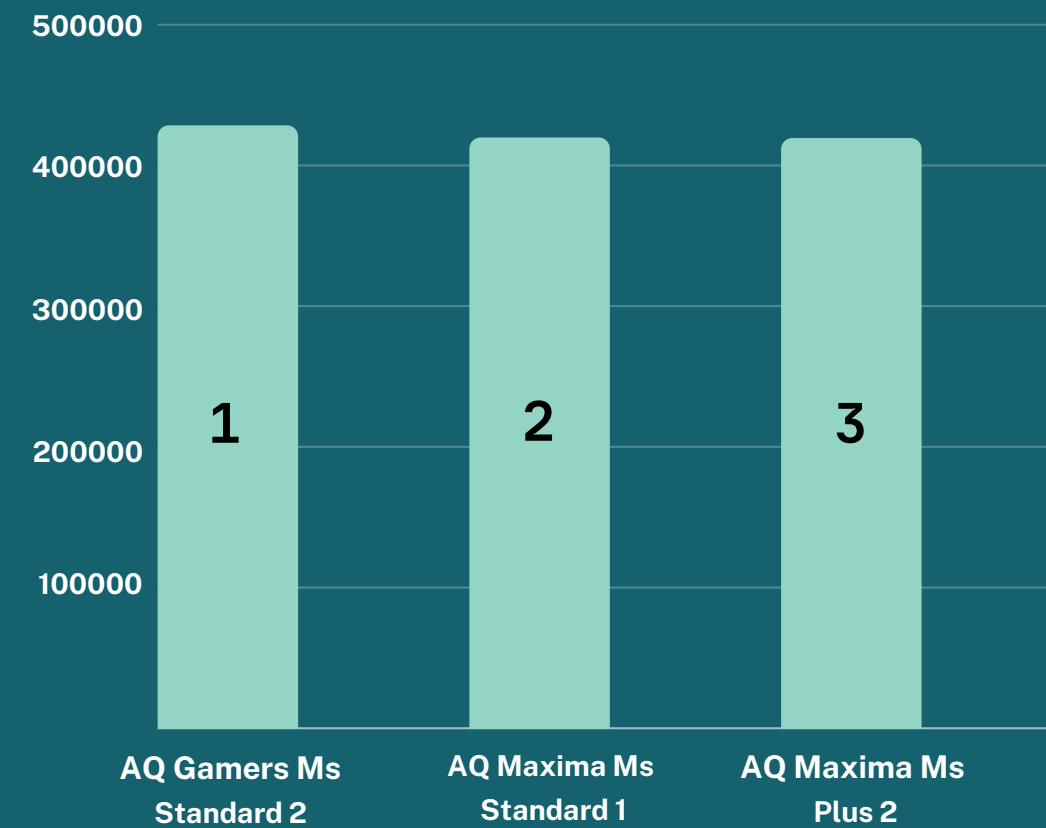
division	product_code	product	total_sold_quant ity	RANK_ORDER
N & S	A6720160103	AQ Pen Drive 2 IN 1	701373	1
N & S	A6818160202	AQ Pen Drive DRC	688003	2
N & S	A6819160203	AQ Pen Drive DRC	676245	3
P & A	A2319150302	AQ Gamers Ms	428498	1
P & A	A2520150501	AQ Maxima Ms	419865	2
P & A	A2520150504	AQ Maxima Ms	419471	3
PC	A4218110202	AQ Digit	17434	1
PC	A4319110306	AQ Velocity	17280	2
PC	A4218110208	AQ Digit	17275	3

Top 3 products in each division that have a high total sold quantity in the fiscal_year 2021

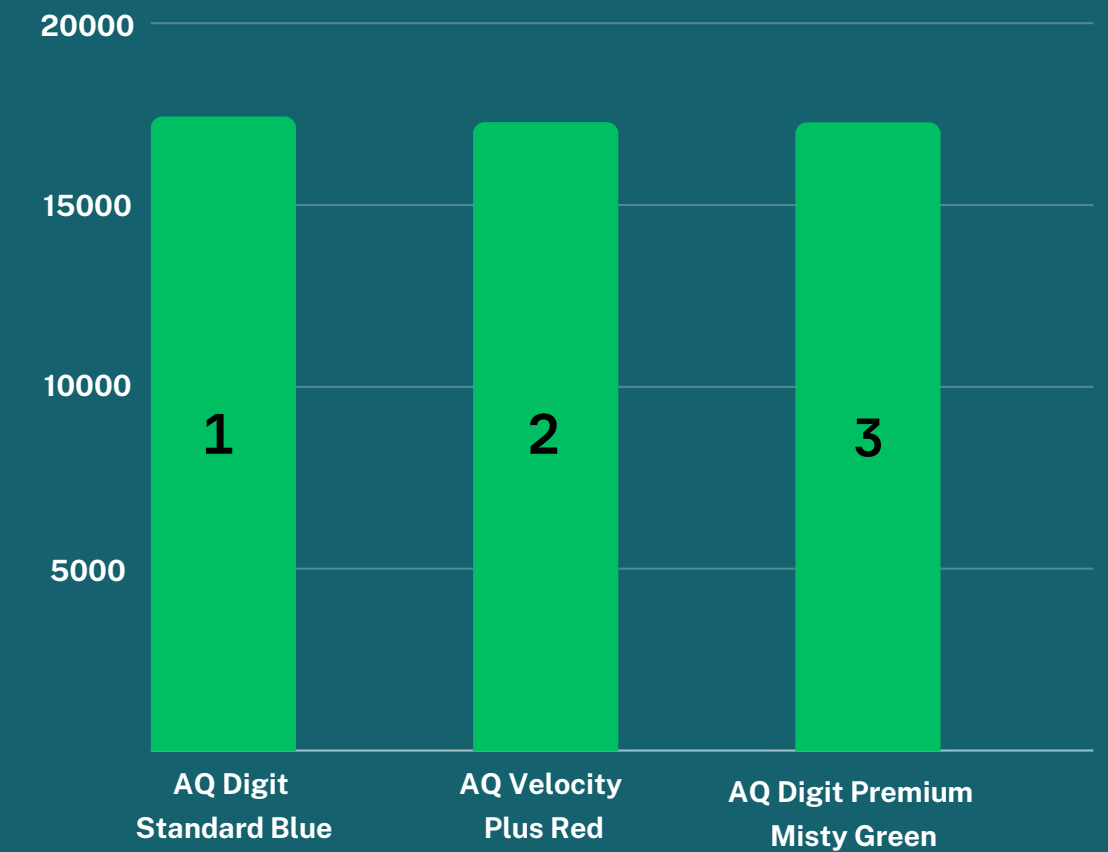
DIVISION - N & S



DIVISION - P & A



DIVISION - PC



Thank You