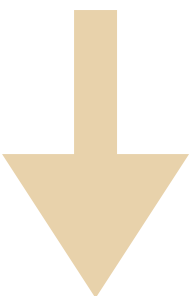


Insights to Management in Consumer Goods Domain

Using ad-hoc requests, I dove into the data and created a series of reports in SQL. These reports are designed to be easily understood, even for those who aren't data experts.

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

```
SELECT
    distinct market,
    region,
    customer
FROM
    dim_customer c
WHERE
    customer = 'Atliq Exclusive' AND
    region = 'APAC'
```

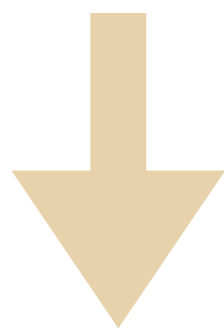


Total 8 markets

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

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

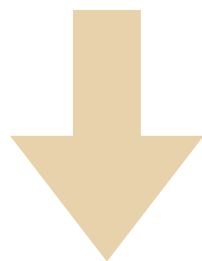
```
WITH
unique_prod_2020 AS (
  SELECT
    COUNT(DISTINCT product_code) AS unique_products_2020
  FROM
    fact_sales_monthly
  WHERE
    fiscal_year = 2020
),
unique_prod_2021 AS (
  SELECT
    COUNT(DISTINCT product_code) AS unique_products_2021
  FROM
    fact_sales_monthly
  WHERE
    fiscal_year = 2021
)
SELECT
  up_20.unique_products_2020,
  up_21.unique_products_2021,
  ROUND(((up_21.unique_products_2021 - up_20.unique_products_2020) / NULLIF(up_20.unique_products_2020, 0)) * 100, 2) AS percentage_chg
FROM
  unique_prod_2020 up_20
CROSS JOIN unique_prod_2021 up_21;
```



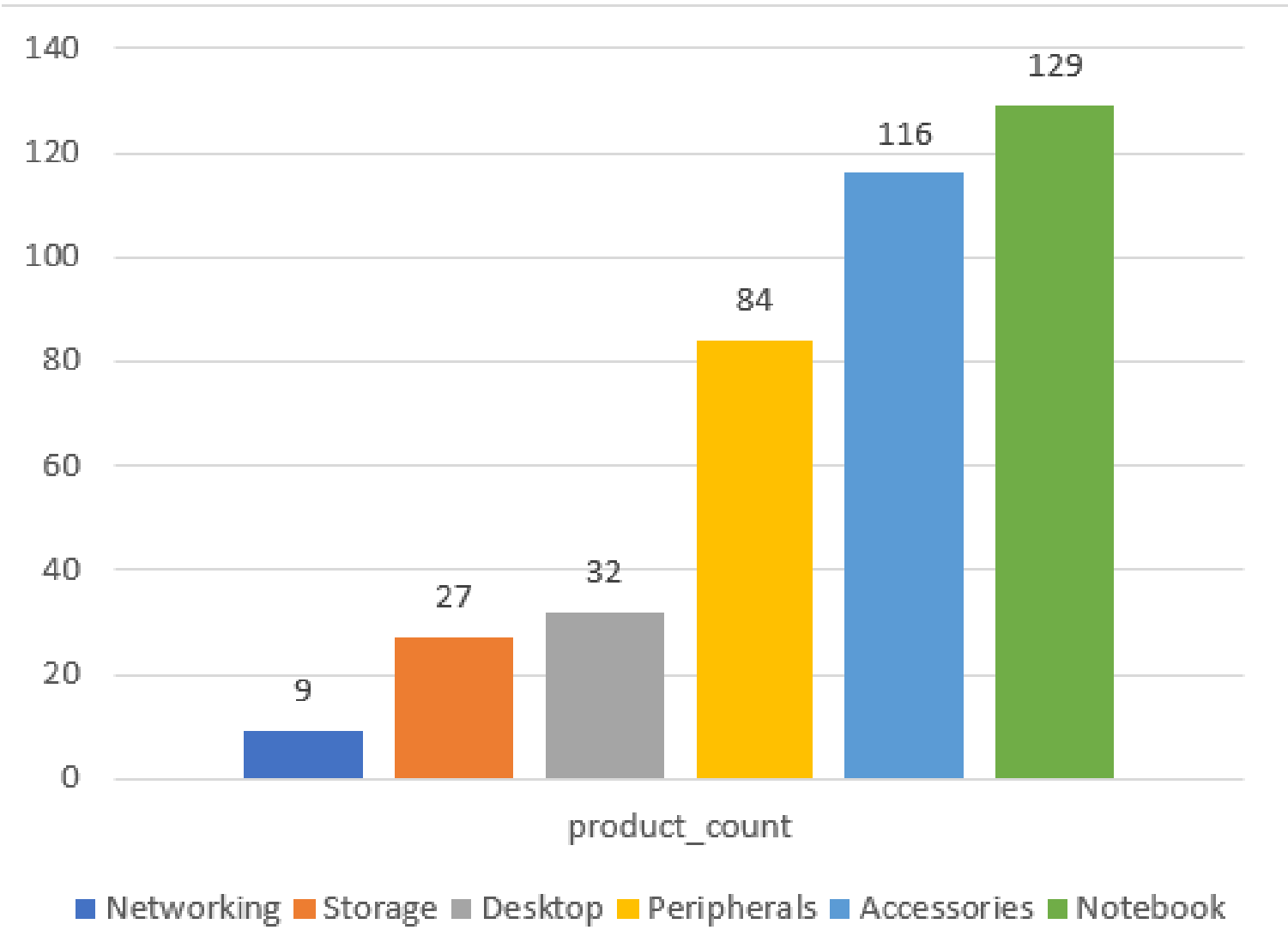
unique_products_2020	unique_products_2021	percentage_chg
245	334	36.33

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

```
SELECT
    segment,
    COUNT(DISTINCT(product_code)) as product_count
FROM dim_product
GROUP BY segment
ORDER BY product_count
```



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



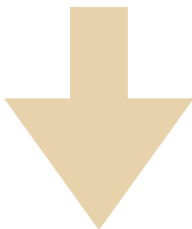
Segment having unique product:-
Maximum - Notebook
Minimum - Networking

4. Which segment had the most increase in unique products in 2021 vs 2020?

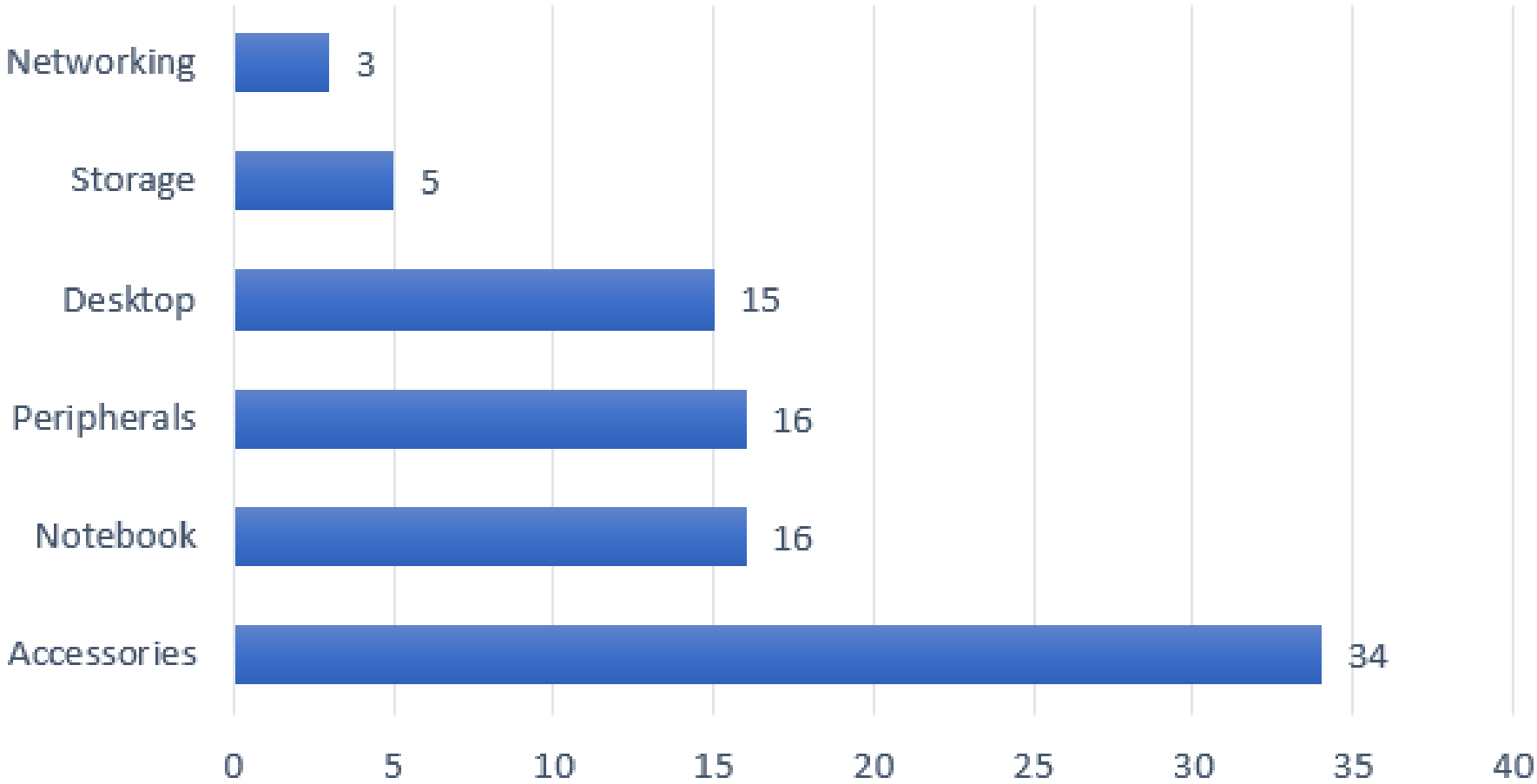
```
WITH segment_product_counts AS (
    SELECT
        d.segment,
        COUNT(
            DISTINCT CASE WHEN f.fiscal_year = 2020 THEN f.product_code END
        ) AS product_count_2020,

        COUNT(
            DISTINCT CASE WHEN f.fiscal_year = 2021 THEN f.product_code END
        ) AS product_count_2021
    FROM
        fact_sales_monthly f
    JOIN dim_product d ON f.product_code = d.product_code
    WHERE
        f.fiscal_year IN (2020, 2021)
    GROUP BY
        d.segment
)

SELECT
    segment,
    product_count_2020,
    product_count_2021,
    product_count_2021 - product_count_2020 AS difference
FROM
    segment_product_counts
ORDER BY
    difference DESC
```



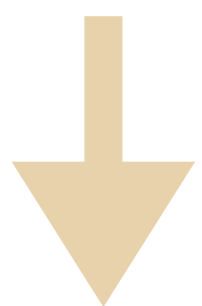
segment	product_count_2020	product_count_2021	difference
Accessories	69	103	34
Notebook	92	108	16
Peripherals	59	75	16
Desktop	7	22	15
Storage	12	17	5
Networking	6	9	3



In the **Accessories** segment, the greatest increase in unique product forms occurred from 2020 to 2021

5. Get the products that have the highest and lowest manufacturing costs.

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

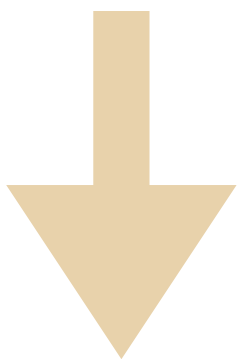


product_code	product	manufacturing_cost
A2118150101	AQ Master wired x1 Ms	0.8920
A6120110206	AQ HOME Allin1 Gen 2	240.5364

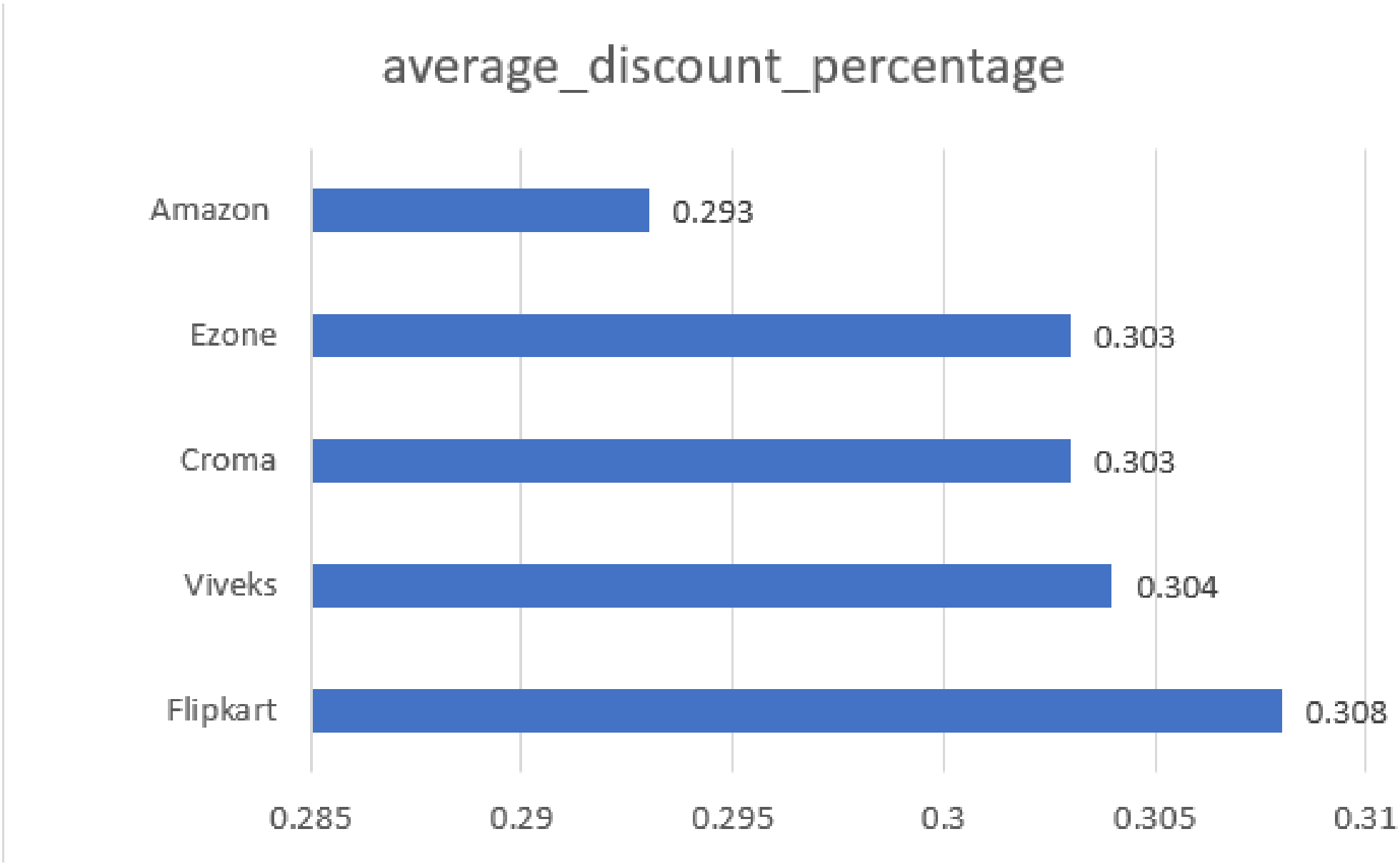
6. Generate a report which contains the top 5 customers who received an average high pre_invoice_discount_pct for the fiscal year 2021 and in the Indian market.

```
SELECT
  c.customer_code,
  c.customer,
  ROUND(
    AVG(f.pre_invoice_discount_pct), 3) AS average_discount_percentage
FROM
  dim_customer c
  JOIN fact_pre_invoice_deductions f ON c.customer_code = f.customer_code
WHERE
  fiscal_year = 2021
  AND market = 'India'
GROUP BY
  c.customer,
  c.customer_code

ORDER BY
  average_discount_percentage DESC
LIMIT 5
```



customer_code	customer	average_discount_percentage
90002009	Flipkart	0.308
90002006	Viveks	0.304
90002002	Croma	0.303
90002003	Ezone	0.303
90002016	Amazon	0.293

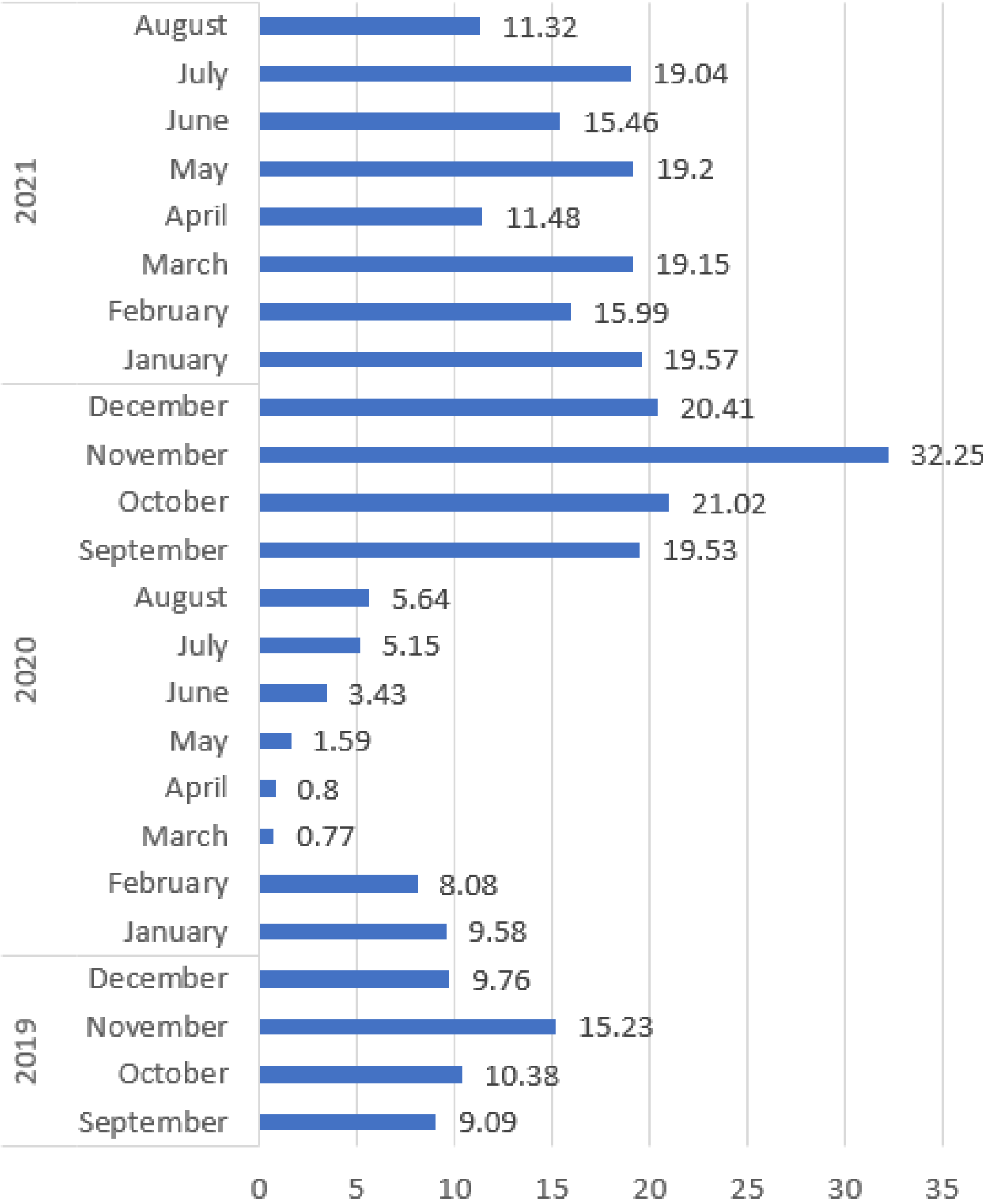


7. Get the complete report of the Gross sales amount for the customer “Atliq Exclusive” for each month . This analysis helps to get an idea of low and high-performing months and take strategic decisions.

```
SELECT
    MONTHNAME(f.date) AS month_name,
    YEAR(f.date) as _year,
    ROUND(SUM(g.gross_price * f.sold_quantity)/1000000,2) AS gross_sales_amount_mln

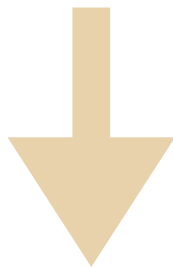
FROM fact_sales_monthly f
JOIN fact_gross_price g ON f.product_code = g.product_code
JOIN dim_customer c ON f.customer_code = c.customer_code
WHERE
    c.customer = 'Atliq Exclusive'
GROUP BY month_name,_year
```

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

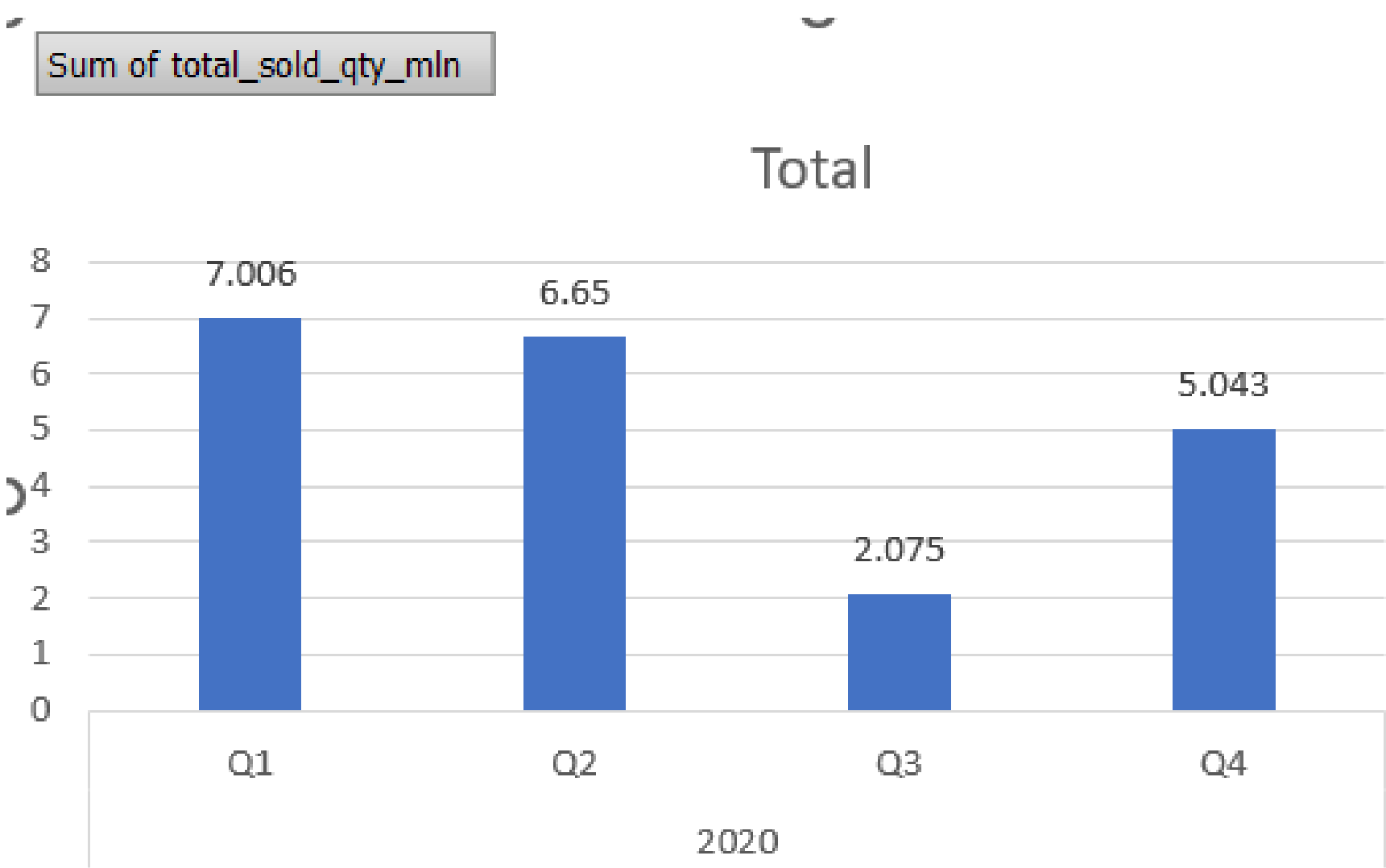


8. In which quarter of 2020, got the maximum total_sold_quantity?

```
SELECT
  f.fiscal_year,
  CASE
    WHEN MONTH(f.date) IN (9, 10, 11) THEN 'Q1'
    WHEN MONTH(f.date) IN (12, 1, 2) THEN 'Q2'
    WHEN MONTH(f.date) IN (3, 4, 5) THEN 'Q3'
    WHEN MONTH(f.date) IN (6, 7, 8) THEN 'Q4'
  END AS quarter_name,
  ROUND(SUM(f.sold_quantity)/1000000,3) as total_sold_qty_mln
FROM
  fact_sales_monthly f
WHERE fiscal_year = 2020
GROUP BY quarter_name
ORDER BY total_sold_qty_mln desc
```



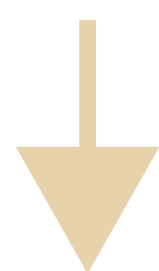
fiscal_year	quarter_name	total_sold_qty_mln
2020	Q1	7.006
2020	Q2	6.650
2020	Q4	5.043
2020	Q3	2.075



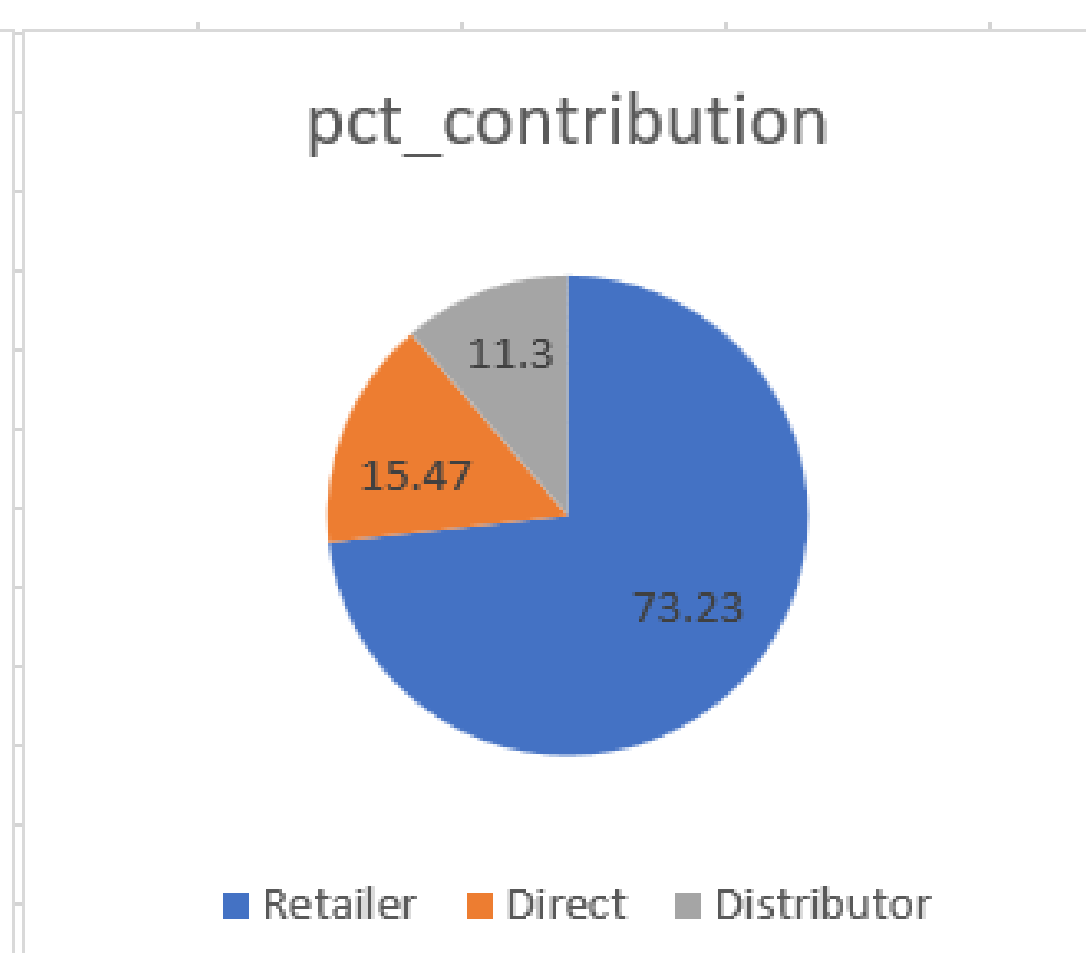
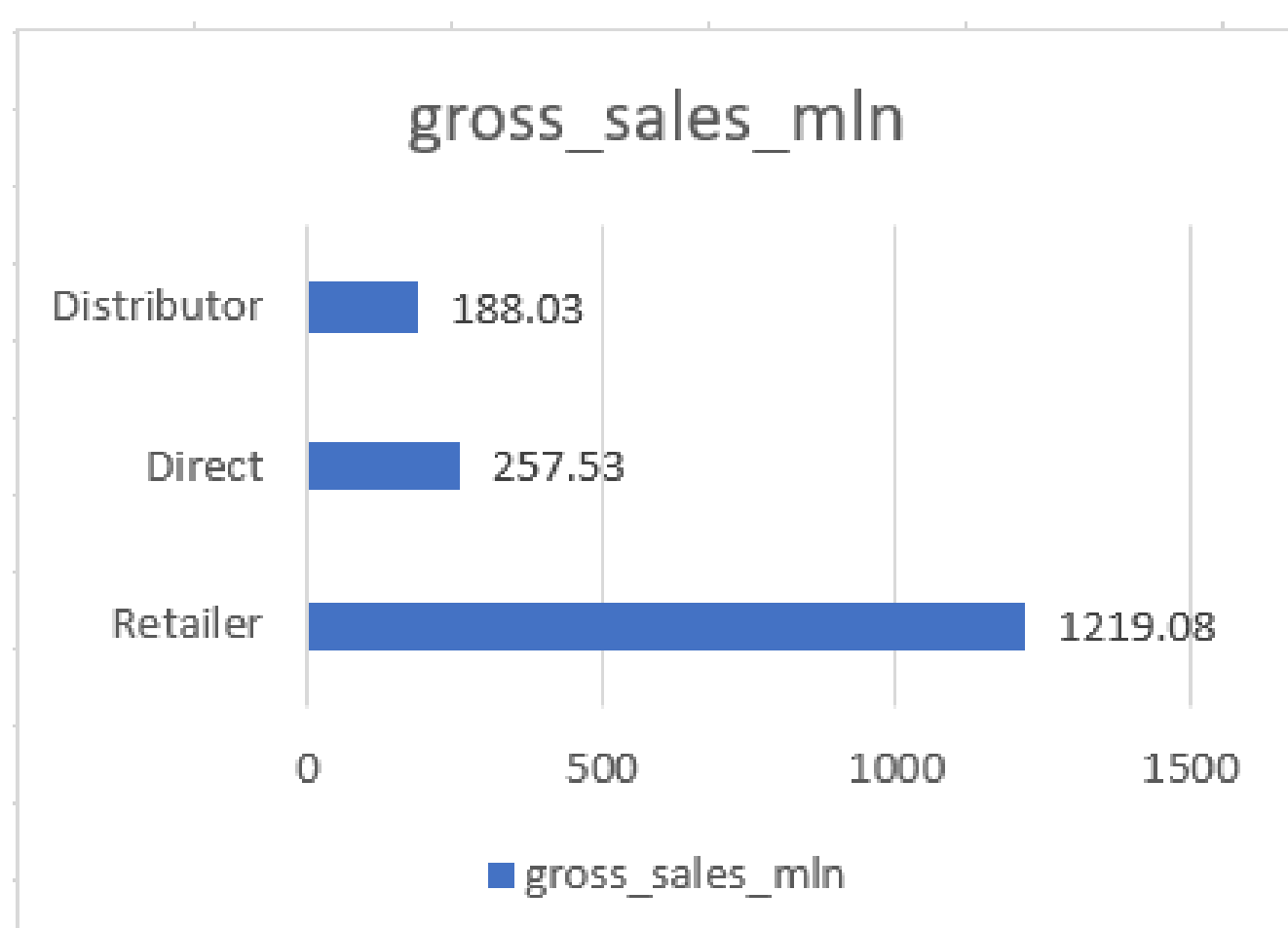
Maximum quantity sold in **first quarter** of fiscal year 2020

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

```
WITH gross_sales as
(
SELECT
    c.channel AS _channel,
    ROUND(SUM(g.gross_price * s.sold_quantity)/1000000,2) AS gross_sales_mln
FROM fact_sales_monthly s
JOIN fact_gross_price g
ON s.product_code = g.product_code
AND s.fiscal_year = g.fiscal_year
JOIN dim_customer c
ON s.customer_code = c.customer_code
WHERE s.fiscal_year = 2021
GROUP BY c.channel
)
SELECT
    _channel,
    gross_sales_mln,
    ROUND(gross_sales_mln/SUM(gross_sales_mln) OVER() *100,2) AS pct_contribution
FROM gross_sales
ORDER BY pct_contribution DESC
```



_channel	gross_sales_mln	pct_contribution
Retailer	1219.08	73.23
Direct	257.53	15.47
Distributor	188.03	11.30



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

```
WITH cte1 AS
(
    SELECT
        p.division AS _division,
        s.product_code AS _product_code,
        p.product AS _product,
        SUM(s.sold_quantity) AS total_sold_qty
    FROM
        fact_sales_monthly s
    JOIN
        dim_product p ON s.product_code = p.product_code
    WHERE
        s.fiscal_year = 2021
    GROUP BY
        p.division, p.product, p.product_code
),
cte2 AS
(
    SELECT
        _division,
        _product_code,
        _product,
        total_sold_qty,
        DENSE_RANK() OVER(PARTITION BY _division ORDER BY total_sold_qty DESC) AS _rank
    FROM
        cte1
)

SELECT * FROM cte2
WHERE _rank <= 3;
```

_division	_product_code	_product	total_sold_qty	_rank
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

