Ad-hoc Insights

Consumer Goods

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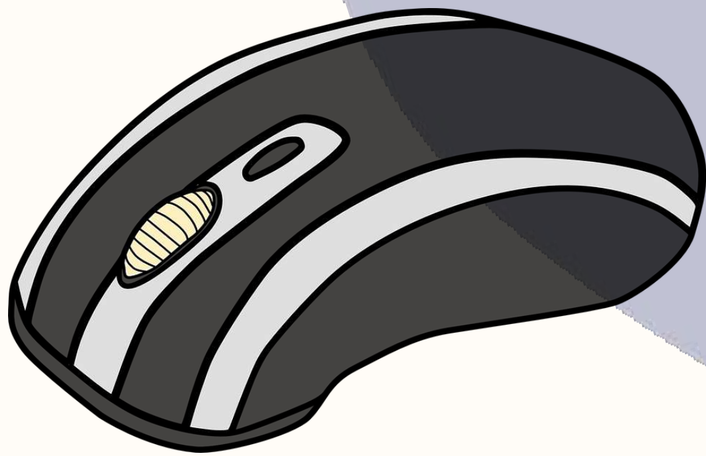
Objectives

•Atliq Hardware, an imaginary company, representing a leading Indian computer hardware producer with a global presence.
•The management observed a lack of sufficient insights for making quick and informed data-driven decisions.
•To address this, they plan to expand their data analytics team by recruiting junior data analysts.
•Tony Sharma, the Data Analytics Director, seeks candidates proficient in both technical and soft skills.
•To evaluate these skills effectively, he decided to organize an SQL challenge consisting of 10 ad hoc requests.

Company Background



Atliq Hardware is a computer hardware & accessory manufacturer.

They operate in four major Regions:
•Asia Pacific (APAC)
•Europe (EU)
•North America (NA)
•Latin America (LATAM)

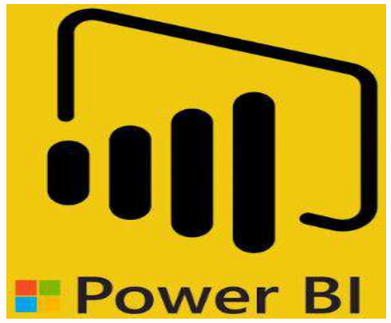
The company's fiscal year starts in September and ends in August (e.g., September 2020 to August 2021 = FY 2021).

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 count for each segment and sort them in descending order of product count.
4. 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. 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?

Tools used

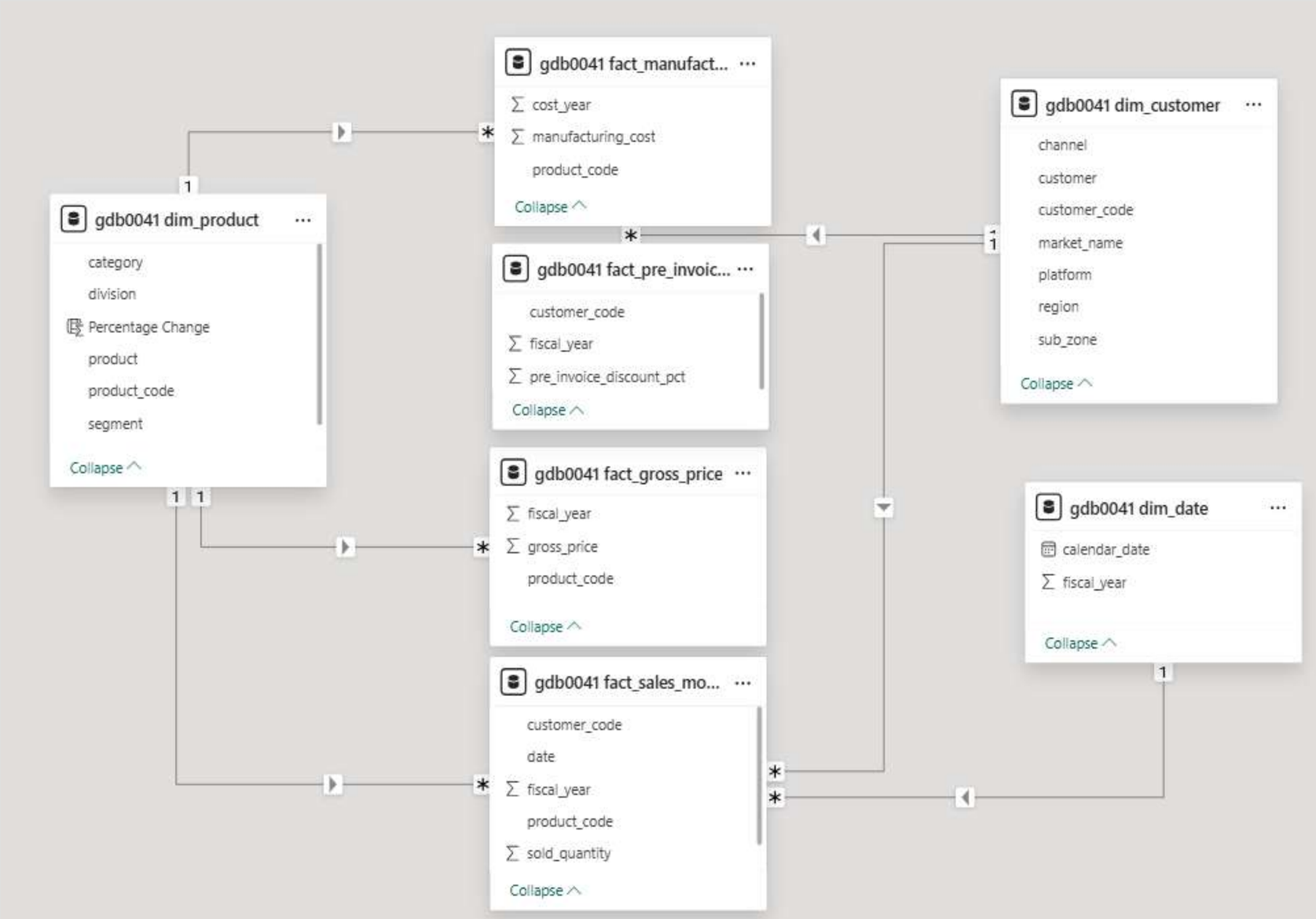
For Ad-hoc Queries



For Visualizations

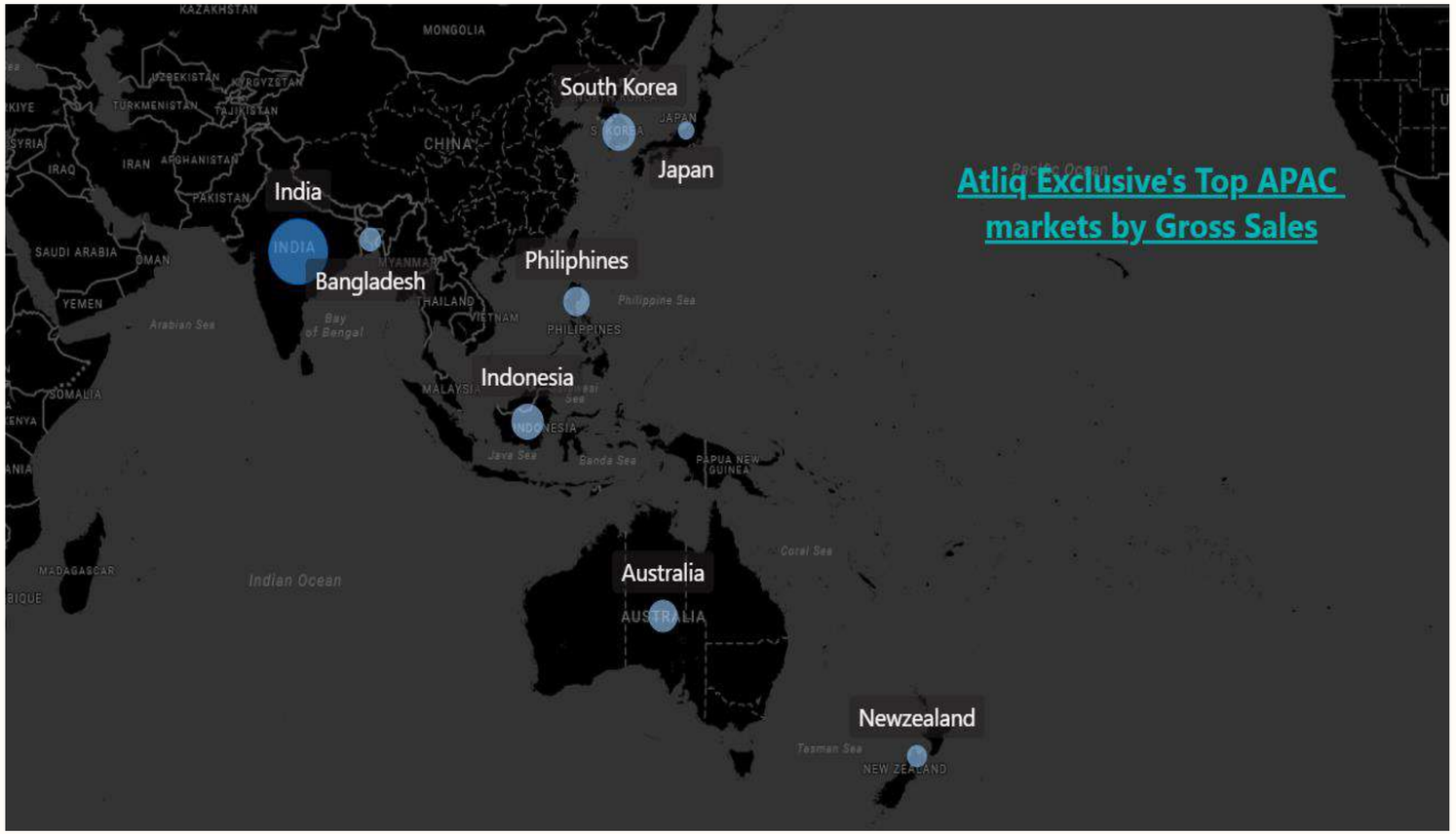
For Presentation

Data Model


gdb0041 fact_manufact...
cost_year
manufacturing_cost
product_code
Collapse
gdb0041 dim_customer
channel
customer
customer_code
market_name
platform
region
sub_zone
Collapse
gdb0041 dim_product
category
division
Percentage Change
product
product_code
segment
Collapse
gdb0041 fact_pre_invoic...
customer_code
fiscal_year
pre_invoice_discount_pct
Collapse
gdb0041 fact_gross_price
fiscal_year
gross_price
product_code
Collapse
gdb0041 dim_date
calendar_date
fiscal_year
Collapse
gdb0041 fact_sales_mo...
customer_code
date
fiscal_year
product_code
sold_quantity
Collapse
1
*

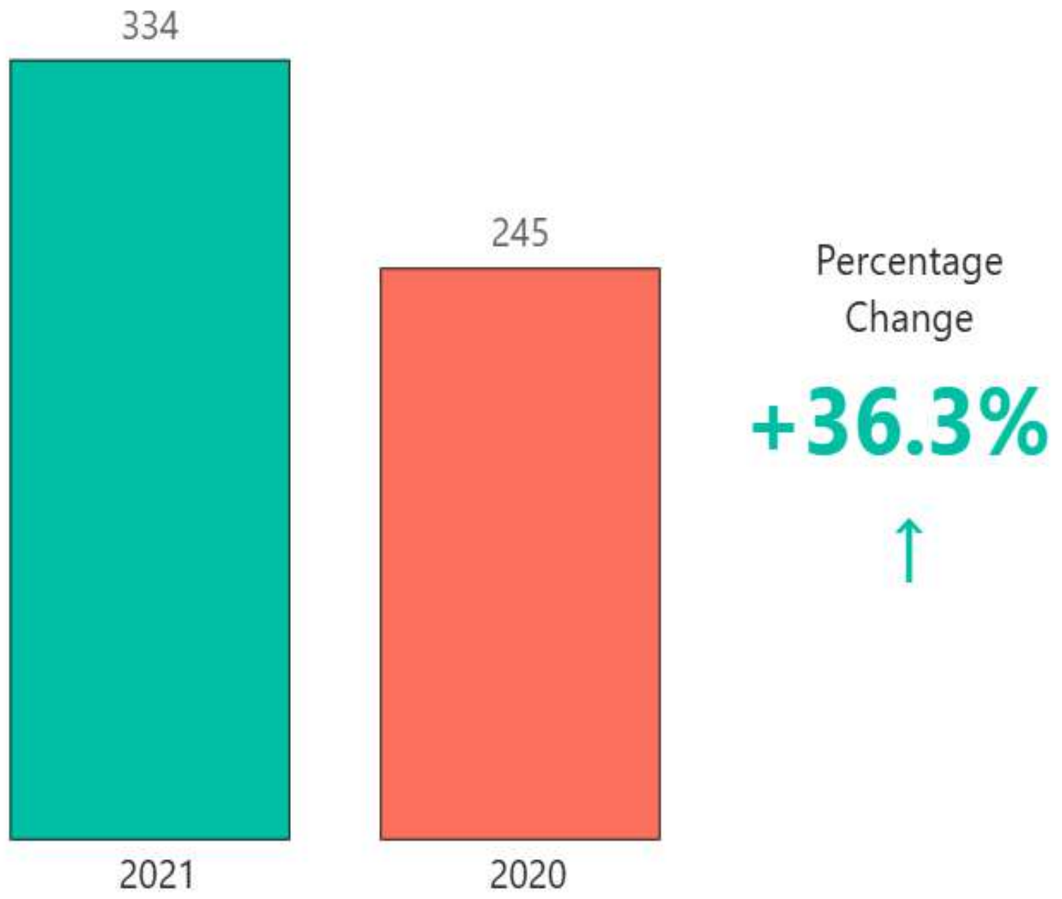
Q1. Provide the list of markets in which customer Atliq Exclusive operates its business in the APAC region.

```sql
SELECT distinct market,
        customer,
        region
from dim_customer
where customer='Atliq Exclusive'
and region='APAC'
order by market;
```



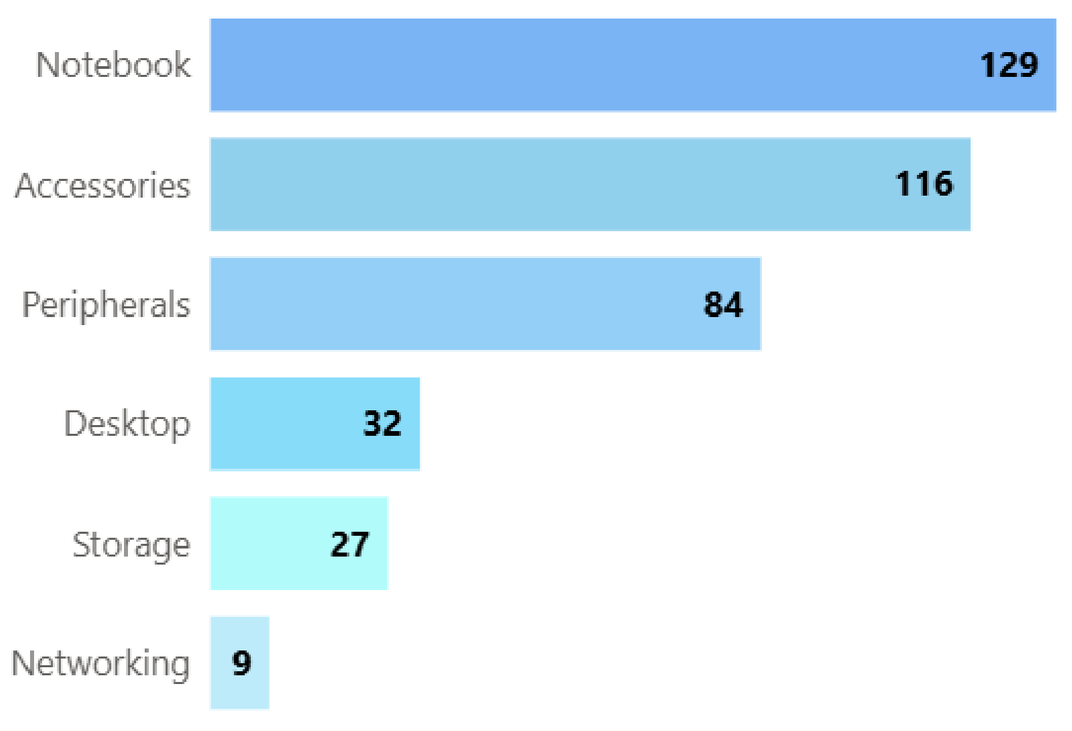
Q2. What is the percentage of unique product increase in 2021 vs. 2020?

```sql
with products_2021 as (
SELECT count(distinct p.product_code) as unique_products_2021
from dim_product p
join fact_sales_monthly s
on s.product_code=p.product_code
where fiscal_year=2021
),
 products_2020 as (
SELECT count(distinct p.product_code) as unique_products_2020
from dim_product p
join fact_sales_monthly s
on s.product_code=p.product_code
where fiscal_year=2020
)
select unique_products_2020,
       unique_products_2021,
       ROUND(((unique_products_2021-unique_products_2020)/unique_products_2020)*100,2) as pct_chg
from products_2021, products_2020;
```



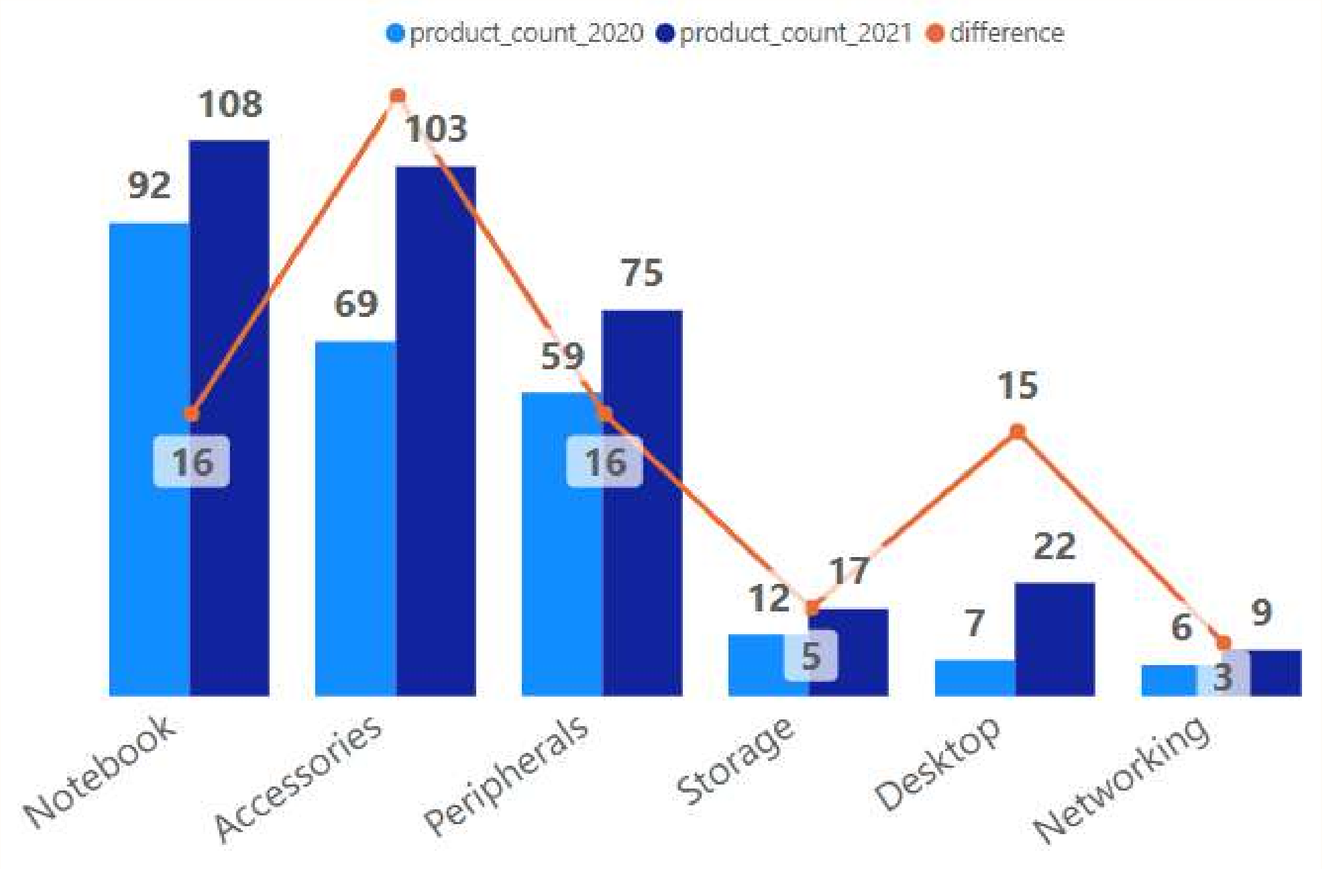
Q3. Provide a report with all the unique product count for each segment and sort them in descending order of product count.

```sql
select segment,
       count(distinct product_code) as product_count
from dim_product
group by segment
order by product_count desc;
```



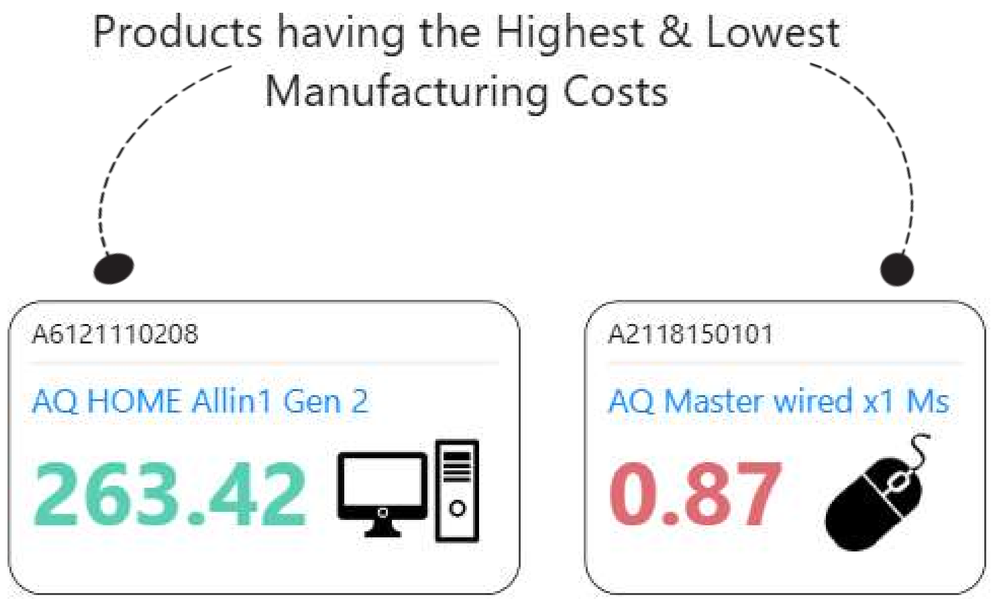
Q4. Which segment had the most increase in unique products in 2021 vs 2020?

```sql
with cte1 as (
select count(distinct p.product_code) as product_count_2021,
       s.fiscal_year,
       p.segment
from dim_product p
join fact_sales_monthly s
on s.product_code=p.product_code
where fiscal_year=2021
group by segment),
 cte2 as (
select count(distinct p.product_code) as product_count_2020,
       s.fiscal_year,
       p.segment
from dim_product p
join fact_sales_monthly s
on s.product_code=p.product_code
where fiscal_year=2020
group by segment)
select cte1.segment,
       product_count_2020,
       product_count_2021,
       (product_count_2021-product_count_2020) as difference
from cte1
join cte2
on cte1.segment=cte2.segment
order by difference desc;
```



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

```sql
with cte1 as(
select p.product_code, p.product,
       m.manufacturing_cost
from fact_manufacturing_cost m
join dim_product p
on p.product_code=m.product_code
)
select *
from cte1
where manufacturing_cost = (select min(manufacturing_cost) from cte1)
or manufacturing_cost = (select max(manufacturing_cost) from cte1)
order by manufacturing_cost desc;
```



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.

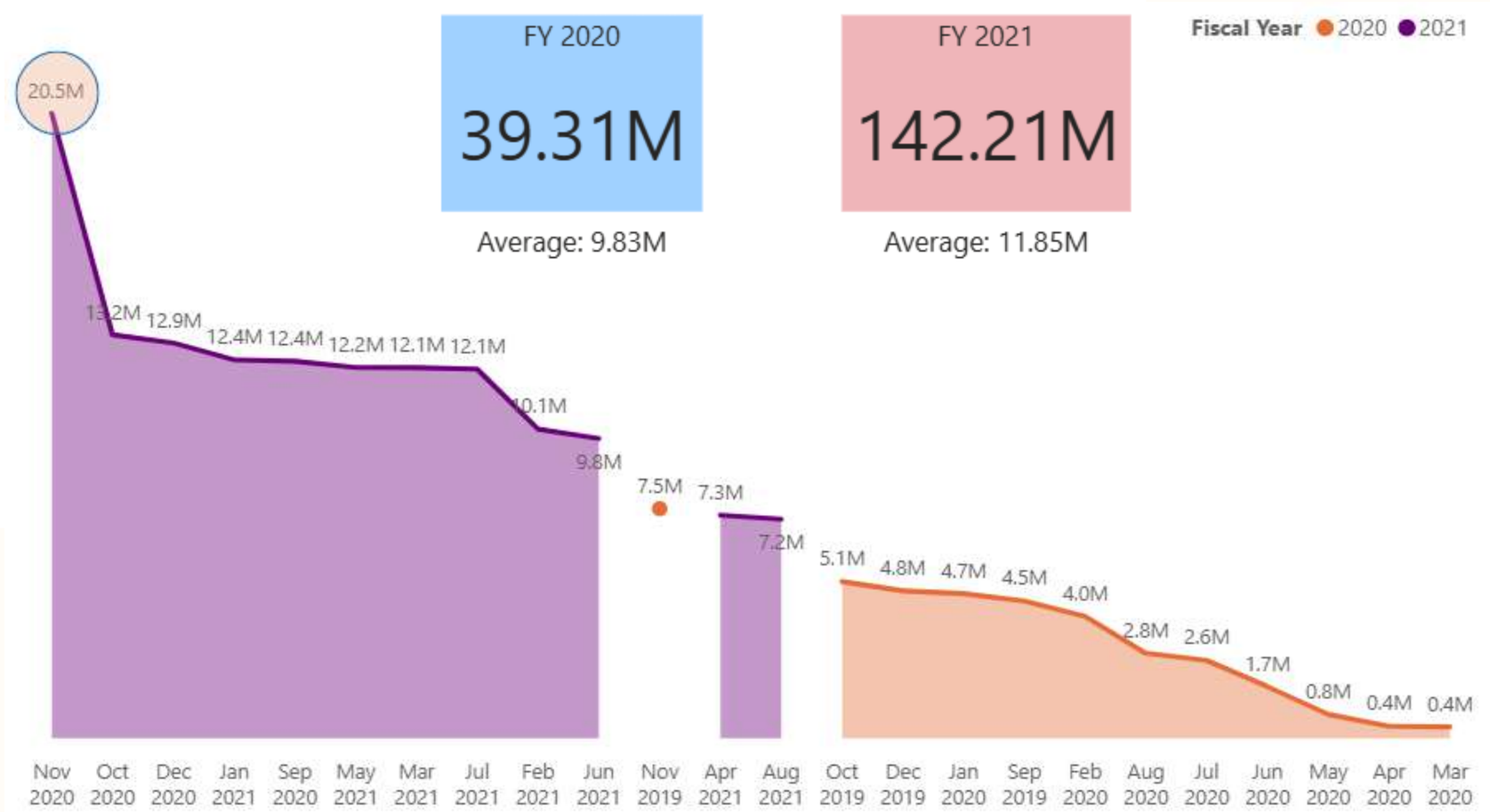
```sql
select c.customer_code,
       c.customer,
       round(avg(pre.pre_invoice_discount_pct)*100,2) as average_discount_percentage
from dim_customer c
join fact_pre_invoice_deductions pre
on pre.customer_code=c.customer_code
where pre.fiscal_year=2021 and c.market='India'
group by c.customer_code, c.customer
order by average_discount_percentage desc
limit 5;
```

Customer Code	Customer	Avg Discount %
90002009	Flipkart	30.83
90002006	Viveks	30.38
90002003	Ezone	30.28
90002002	Croma	30.25
90002016	Amazon	29.33

Q7. Get the complete report of the Gross sales amount for the customer Atliq Exclusive for each month.

```sql
select month(s.date) as month,
       year(s.date) as year,
       sum(g.gross_price * s.sold_quantity) as gross_sales_amount
from fact_sales_monthly s
join fact_gross_price g
on g.product_code=s.product_code and
   g.fiscal_year=s.fiscal_year
join dim_customer c
on c.customer_code=s.customer_code
where c.customer='Atliq Exclusive'
group by month, year, c.customer
order by year, month;
```

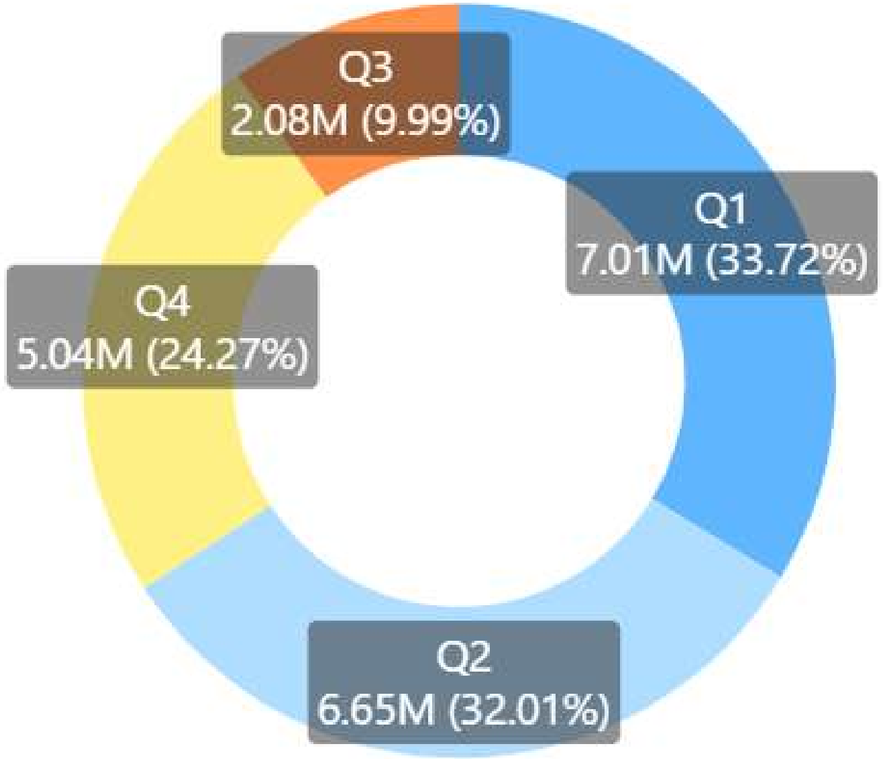
Gross sales increased from 39.31M in FY 2020 to 142.21M in FY 2021, with a peak of 20.5M in November 2020. The average monthly sales grew from 9.83M to 11.85M.



Q8. Which quarter of 2020, got the maximum 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, 4, 5) then "Q3"
    else "Q4"
    end as quarter,
    sum(sold_quantity) as total_sold_quantity
from fact_sales_monthly s
join fact_gross_price g
on g.product_code=s.product_code and
   g.fiscal_year=s.fiscal_year
where s.fiscal_year=2020
group by quarter
order by total_sold_quantity desc;
```

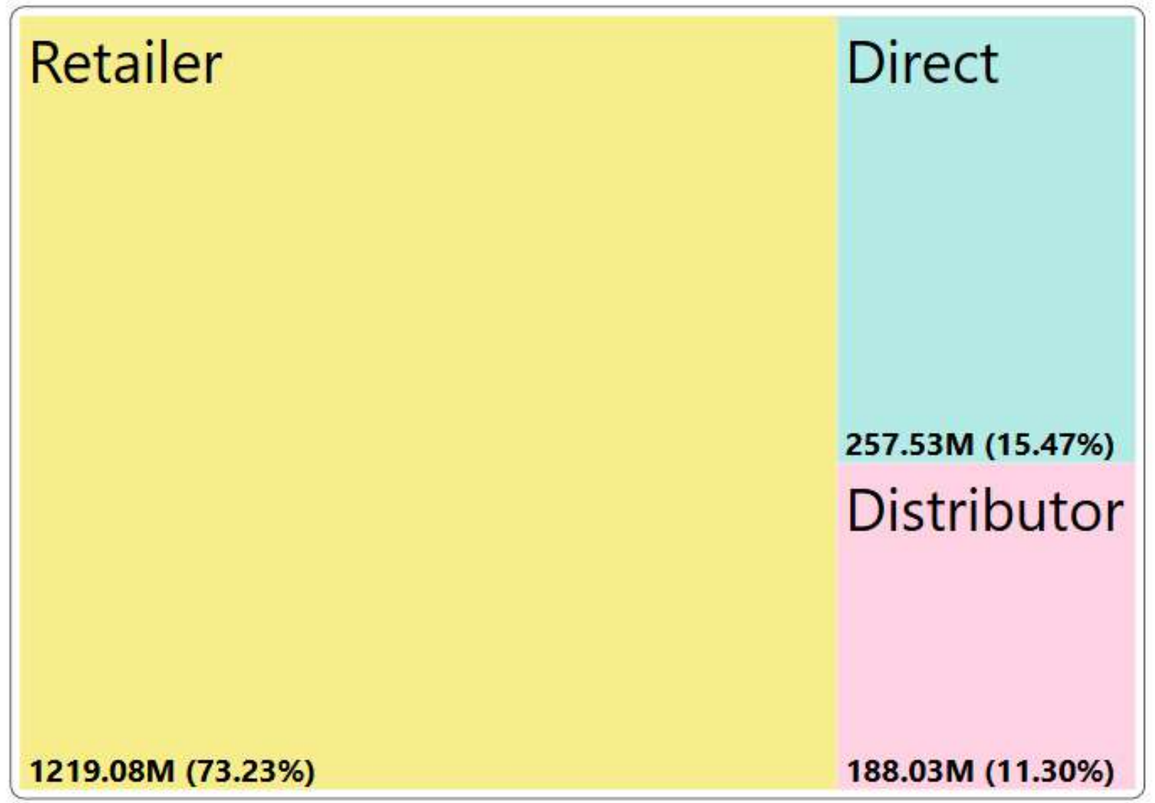
Q1 has the highest total sold quantity in 2020 (7005619, 33.72%)



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

```sql
with cte1 as(
select c.channel,
       round(sum(g.gross_price * s.sold_quantity)/1000000,2) as gross_sales_mln
from fact_sales_monthly s
join dim_customer c
on c.customer_code=s.customer_code
join fact_gross_price g
on g.product_code=s.product_code and
   g.fiscal_year=s.fiscal_year
where s.fiscal_year=2021
group by c.channel),
 cte2 as (
 select sum(gross_sales_mln) as total_sales
 from cte1
 )
select
       cte1.channel,
       gross_sales_mln,
       round((gross_sales_mln / total_sales)*100,2) as percentage
from cte1
cross join cte2
order by gross_sales_mln desc;
```

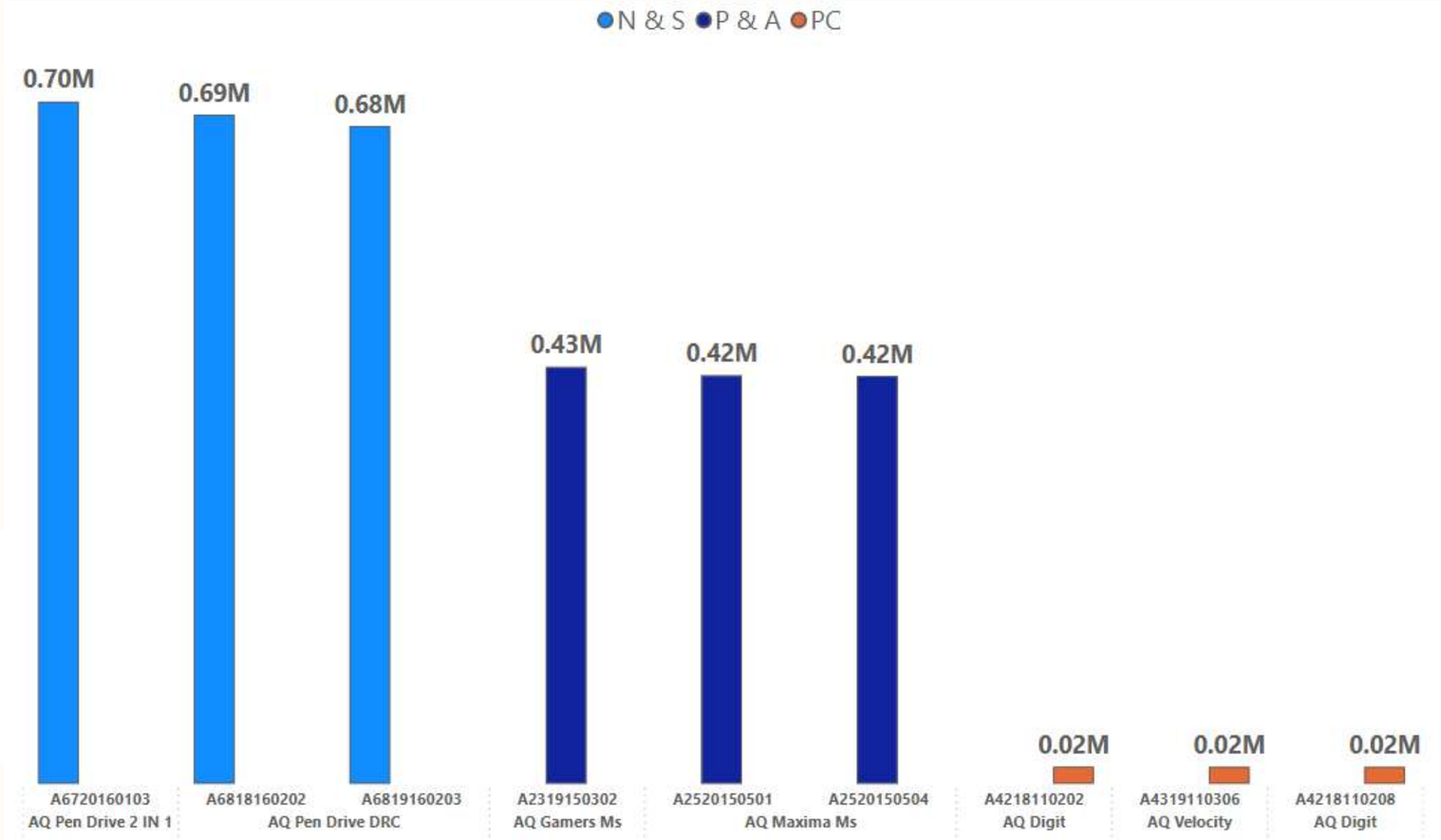
The Retailer channel has generated the highest gross sales (1219.08M) in FY 2021



Q10. Get the Top 3 products in each division that have a high total_sold_quantity in the fiscal_year 2021.

```sql
with cte1 as (
select p.product, p.division, p.product_code,
       sum(s.sold_quantity) as total_sold_quantity
from dim_product p
join fact_sales_monthly s
on s.product_code=p.product_code
where s.fiscal_year=2021
group by p.product_code, p.product, p.division),
 cte2 as (
select *,
       dense_rank() over(partition by division
       order by total_sold_quantity desc) as rank_order
from cte1)
select *
from cte2
where rank_order <= 3;
```

Top 3 Highest Selling Products by division in FY 2021



Thank-you