Codebasics SQL Challenge

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

```sql
SELECT DISTINCT market
FROM dim_customer
WHERE customer = "Atliq Exclusive" AND region = "APAC"
ORDER BY market
```

Result:

market
Australia
Bangladesh
India
Indonesia
Japan
Newzealand
Philiphines
South Korea

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.**

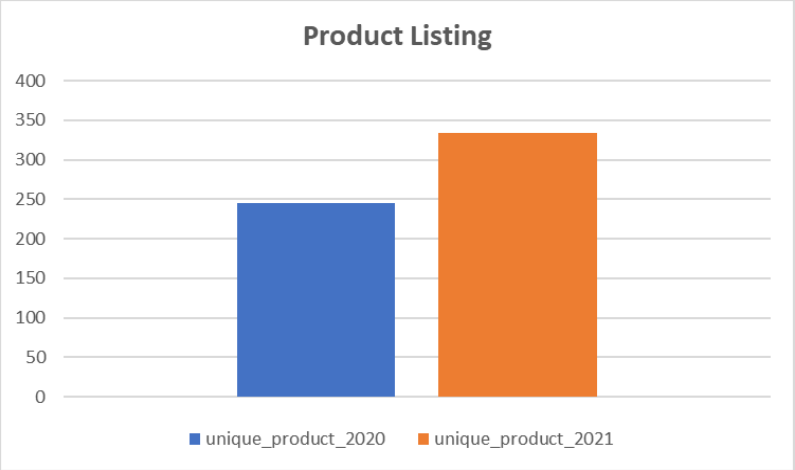
```sql
WITH p_2020 AS (SELECT COUNT(DISTINCT product_code) AS unique_products_2020
FROM fact_sales_monthly
WHERE fiscal_year = 2020),

p_2021 AS (SELECT COUNT(DISTINCT product_code) AS unique_products_2021
FROM fact_sales_monthly
WHERE fiscal_year = 2021)

SELECT unique_products_2020,
unique_products_2021,
ROUND((unique_products_2021 - unique_products_2020)/unique_products_2020*100, 2) AS percentage_chg
FROM p_2020, p_2021
```

Result:

unique_products_2020	unique_products_2021	percentage_chg
245	334	36.33

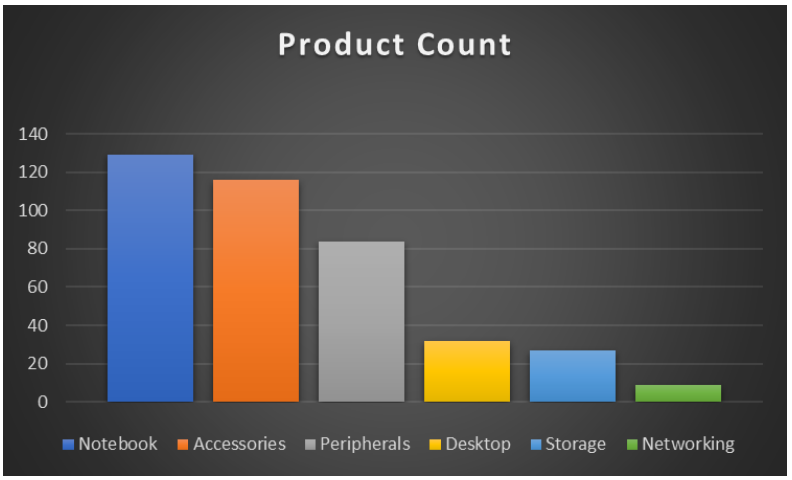


3. **Provide a report with all the unique product counts for each segment and sort them in descending order of product counts. The final output contains 2 fields, segment, product_count**

```sql
SELECT segment,
COUNT(DISTINCT(product_code)) AS product_count
FROM dim_product
GROUP BY segment
```

Result:

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



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**

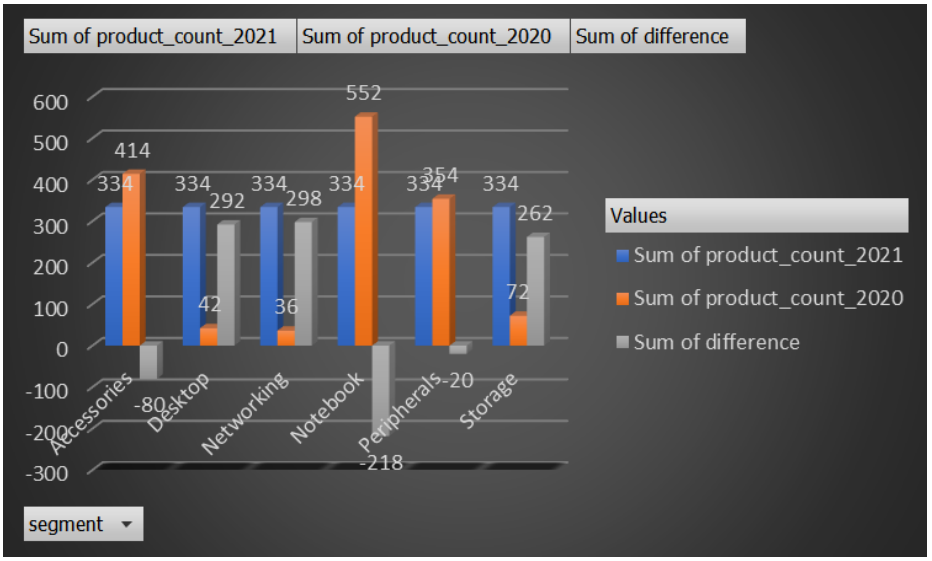
```sql
WITH p_2020 AS (SELECT dp.segment AS segment,
COUNT(DISTINCT(dp.product_code)) AS product_count_2020
FROM dim_product AS dp
LEFT JOIN fact_sales_monthly AS fsm
ON dp.product_code = fsm.product_code
WHERE fiscal_year = 2020
GROUP BY segment),

p_2021 AS (SELECT COUNT(DISTINCT(dp.product_code)) AS product_count_2021
FROM dim_product AS dp
LEFT JOIN fact_sales_monthly AS fsm
ON dp.product_code = fsm.product_code
WHERE fiscal_year = 2021
GROUP BY segment)

SELECT segment,
product_count_2020,
product_count_2021,
product_count_2021 - product_count_2020 AS difference
FROM p_2020, p_2021
```

Result:

segment	product_count_2020	product_count_2021	difference
Storage	12	103	91
Peripherals	59	103	44
Notebook	92	103	11
Networking	6	103	97
Desktop	7	103	96
Accessories	69	103	34
Storage	12	22	10
Peripherals	59	22	-37
Notebook	92	22	-70
Networking	6	22	16
Desktop	7	22	15
Accessories	69	22	-47
Storage	12	9	-3
Peripherals	59	9	-50
Notebook	92	9	-83
Networking	6	9	3
Desktop	7	9	2
Accessories	69	9	-60
Storage	12	108	96
Peripherals	59	108	49
Notebook	92	108	16

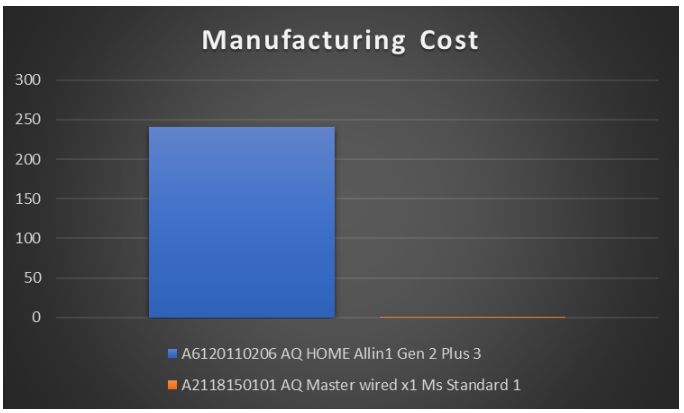


5. **Get the products that have the highest and lowest manufacturing costs. The final output should contain these fields, product_code, product, manufacturing_cost**

```sql
WITH cte AS (SELECT dm.product_code,
        dm.product,
        dm.variant,
        mc.manufacturing_cost
        FROM dim_product dm
        JOIN fact_manufacturing_cost mc
        ON dm.product_code = mc.product_code)
SELECT *
FROM cte
WHERE manufacturing_cost = (SELECT MAX(manufacturing_cost)
                            FROM cte) OR
      manufacturing_cost = (SELECT MIN(manufacturing_cost)
                            FROM cte)
                            ORDER BY manufacturing_cost DESC, product_code
```

Result:

product_code	product	variant	manufacturing_cost
A6120110206	AQ HOME Allin1 Gen 2	Plus 3	240.5364
A2118150101	AQ Master wired x1 Ms	Standard 1	0.8920



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**

```sql
SELECT id.customer_code,
dm.customer,
AVG(id.pre_invoice_discount_pct) AS average_discount_price
FROM fact_pre_invoice_deductions id
JOIN dim_customer dm
ON id.customer_code = dm.customer_code
WHERE id.fiscal_year = 2021 AND dm.market = "India"
GROUP BY id.customer_code, dm.customer
ORDER BY average_discount_price DESC
LIMIT 5
```

Result:

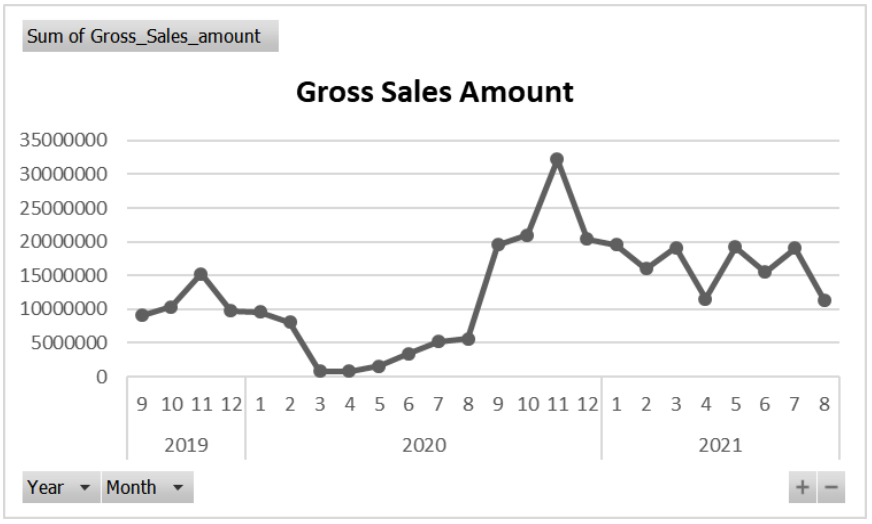
customer_code	customer	average_discount_price
90002009	Flipkart	0.30830000
90002006	Viveks	0.30380000
90002003	Ezone	0.30280000
90002002	Croma	0.30250000
90002016	Amazon	0.29330000

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**

```sql
SELECT MONTH(fsm.date) AS Month,
YEAR(fsm.date) AS Year,
FLOOR(SUM(fgp.gross_price*fsm.sold_quantity)) AS Gross_Sales_amount
FROM fact_sales_monthly fsm
JOIN dim_customer dm ON dm.customer_code = fsm.customer_code
JOIN fact_gross_price fgp ON fsm.product_code = fgp.product_code
WHERE customer = "Atliq Exclusive"
GROUP BY Month, Year
ORDER BY Year
```

Result:

Month	Year	Gross_Sales_amount
9	2019	9092670
10	2019	10378637
11	2019	15231894
12	2019	9755795
1	2020	9584951
2	2020	8083995
3	2020	766976
4	2020	800071
5	2020	1586964
6	2020	3429736
7	2020	5151815
8	2020	5638281
9	2020	19530271
10	2020	21016218
11	2020	32247289
12	2020	20409063
1	2021	19570701
2	2021	15986603
3	2021	19149624
4	2021	11483530
5	2021	19204309



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**

```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"
       WHEN MONTH(date) IN (6, 7, 8) THEN "Q4"
       END AS Quarter,
SUM(sold_quantity) AS total_sold_quantity
FROM fact_sales_monthly
WHERE fiscal_year = 2020
GROUP BY Quarter
```

Result:

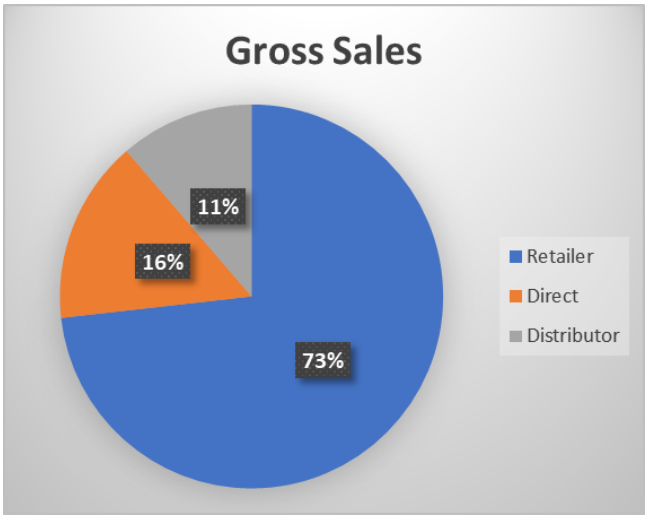
Quarter	total_sold_quantity
Q1	7005619
Q2	6649642
Q3	2075087
Q4	5042541

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**

```sql
WITH gs AS (SELECT dm.channel,
    FLOOR(SUM(fgp.gross_price*fsm.sold_quantity)) AS gross_sales_mln
    FROM dim_customer dm
    JOIN fact_sales_monthly fsm ON dm.customer_code = fsm.customer_code
    JOIN fact_gross_price fgp ON fsm.product_code = fgp.product_code
    WHERE fsm.fiscal_year = 2021
    GROUP BY dm.channel
    ORDER BY gross_sales_mln DESC)
SELECT *,
gross_sales_mln*100/SUM(gross_sales_mln) over() AS percentage
FROM gs
GROUP BY channel
```

Result:

channel	gross_sales_mln	percentage
Retailer	1924170397	73.2171
Direct	406686873	15.4750
Distributor	297175879	11.3079



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**

```sql
WITH cte1 AS (SELECT dm.division,
             dm.product_code,
             dm.product,
             SUM(fsm.sold_quantity) AS total_sold_quantity
             FROM dim_product dm
             JOIN fact_sales_monthly fsm
             ON dm.product_code = fsm.product_code
             GROUP BY dm.division, dm.product_code, dm.product),
cte2 AS (SELECT *,
        RANK() OVER(PARTITION BY division ORDER BY total_sold_quantity DESC) AS rank_order
        FROM cte1)
SELECT *
FROM cte2
WHERE rank_order <=3
```

Result:

division	product_code	product	total_sold_quantity	rank_order
N & S	A6720160103	AQ Pen Drive 2 IN 1	1159222	1
N & S	A6818160201	AQ Pen Drive DRC	1128104	2
N & S	A6419160301	AQ Clx1	729696	3
P & A	A2319150302	AQ Gamers Ms	683634	1
P & A	A2219150204	AQ Master wireless x1 Ms	682321	2
P & A	A2319150306	AQ Gamers Ms	681531	3
PC	A4218110202	AQ Digit	26012	1
PC	A4319110306	AQ Velocity	25978	2
PC	A4118110107	AQ Aspiron	25963	3