

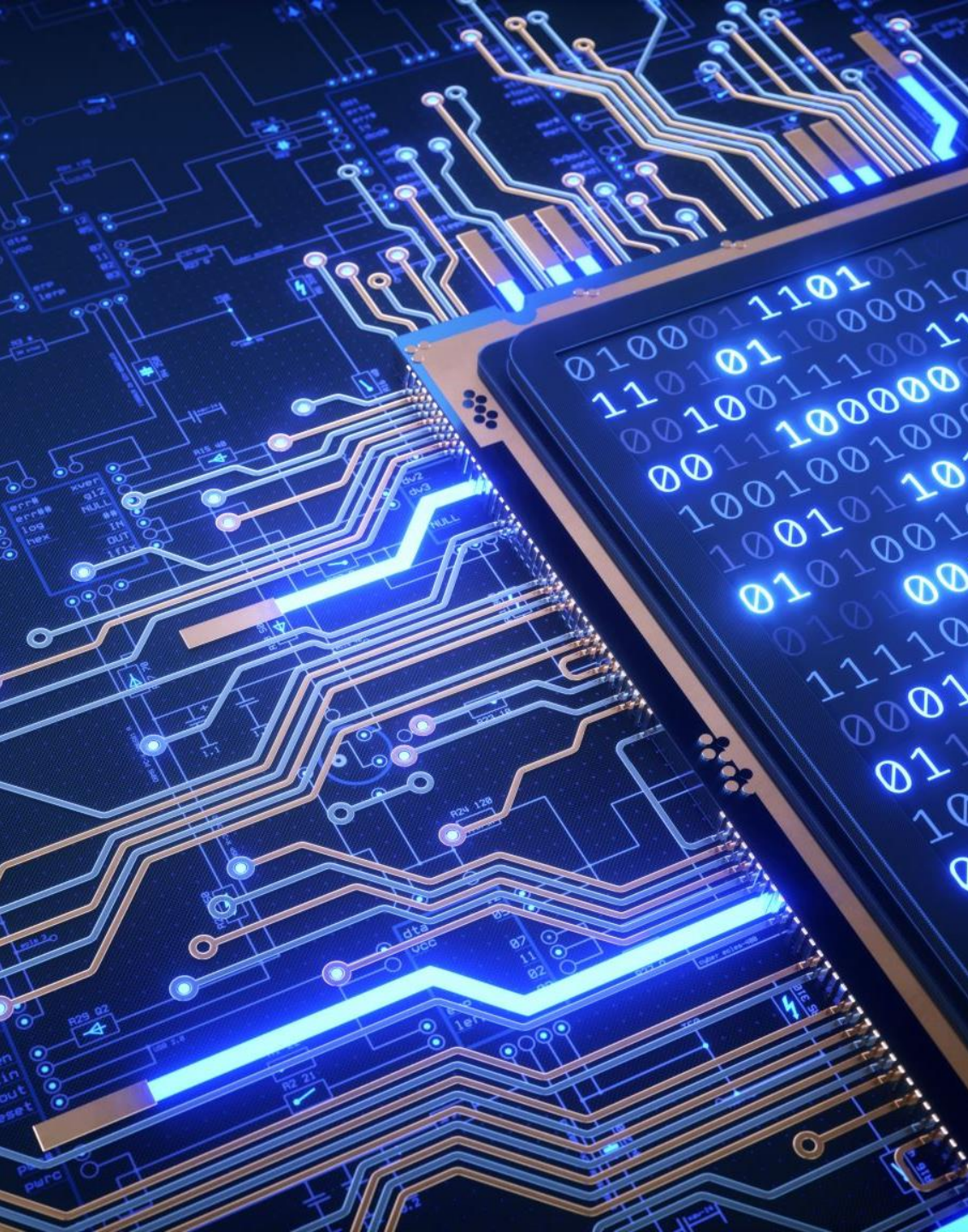


CONSUMER GOODS

AD-HOC REQUESTS

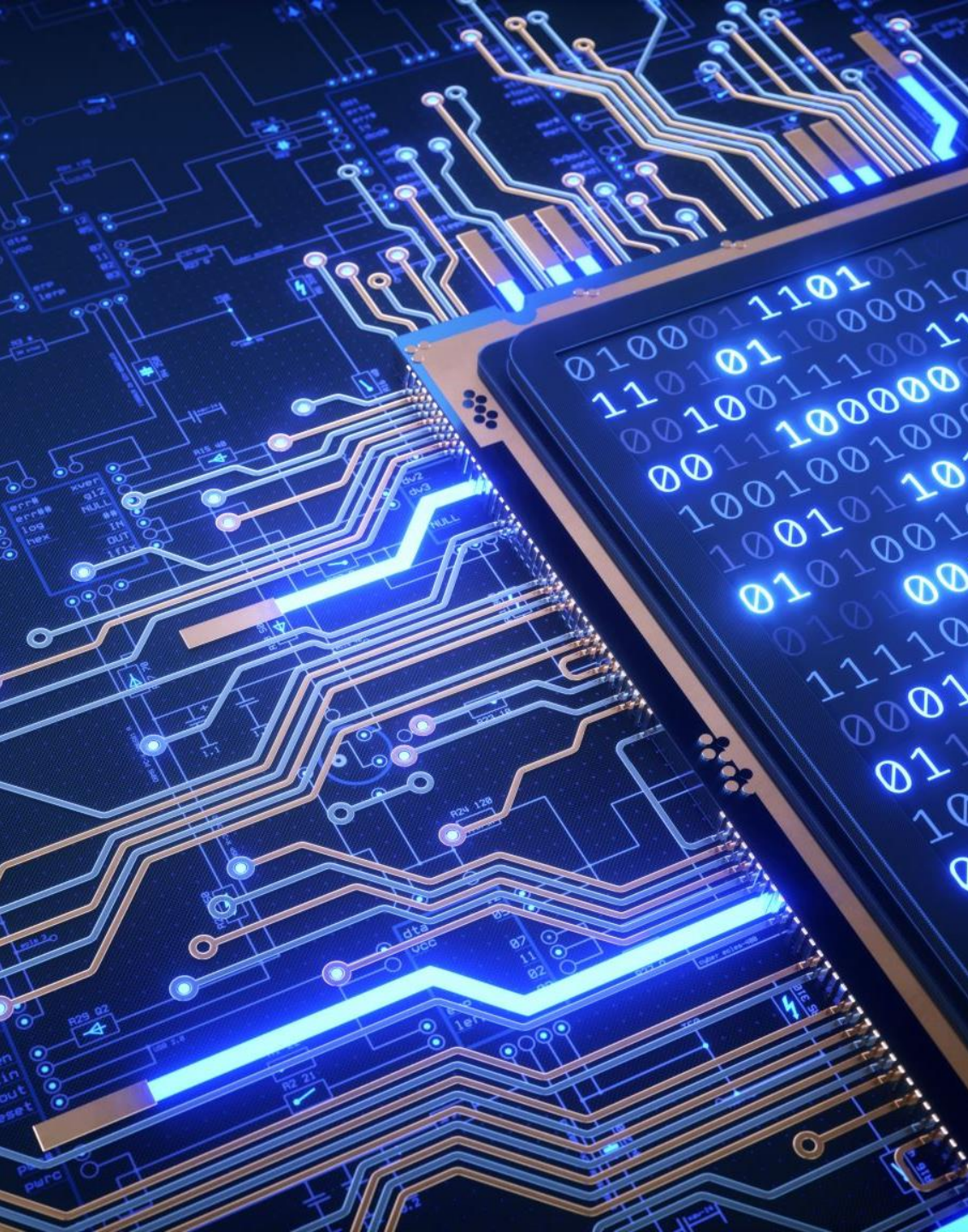
by
Pratik Umakant Jadhav





About Atliq Hardware

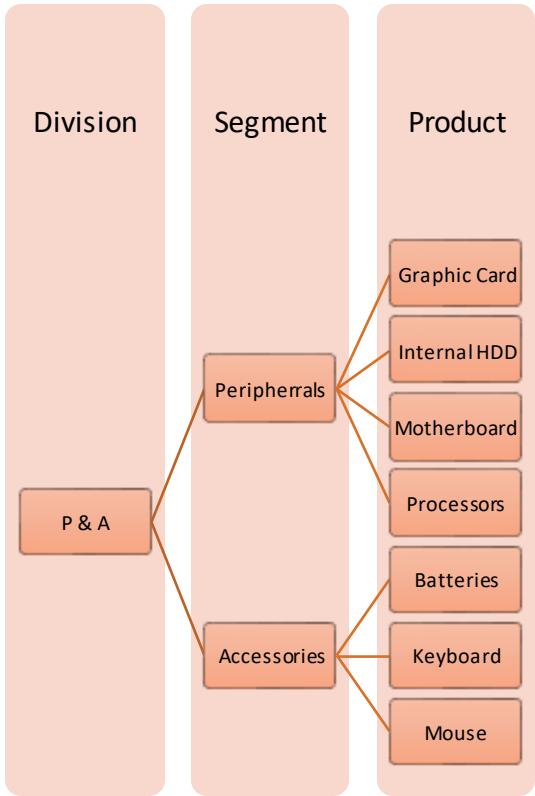
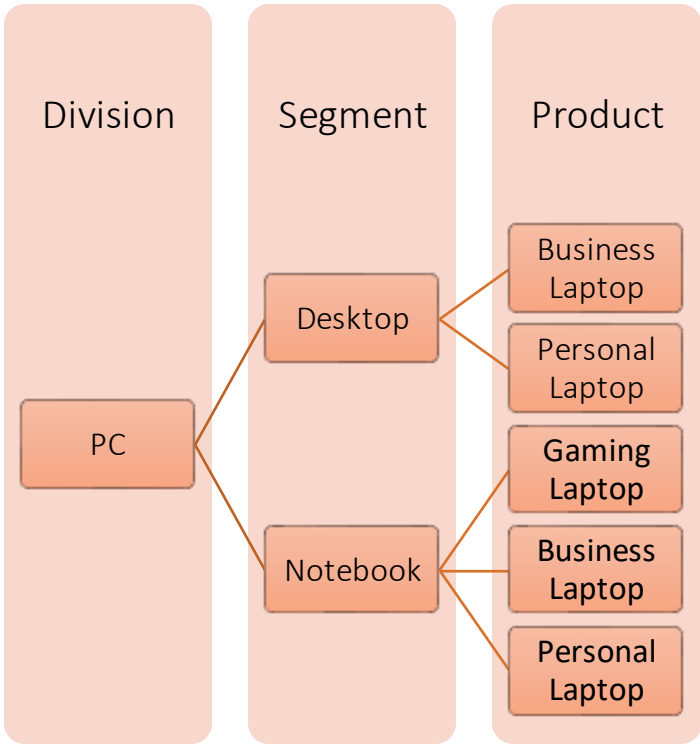
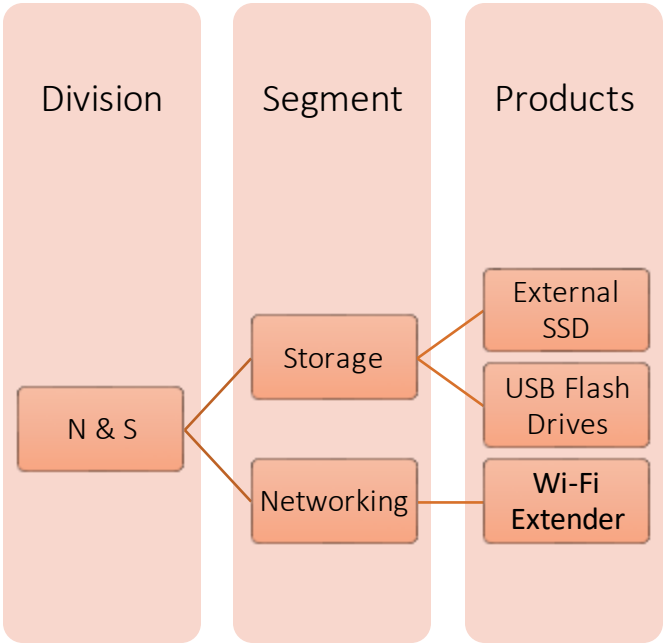
- Atliq Hardwares (imaginary company) is one of the leading computer hardware producers in India and well expanded in other countries too.
- Company has spanned its business remarkably worldwide in 27 countries which are in Asia Pacific, Europe, North America and Latin America regions.



Agenda

- The Management needs sufficient 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.

Products Overview



Request 1

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

Query and Output

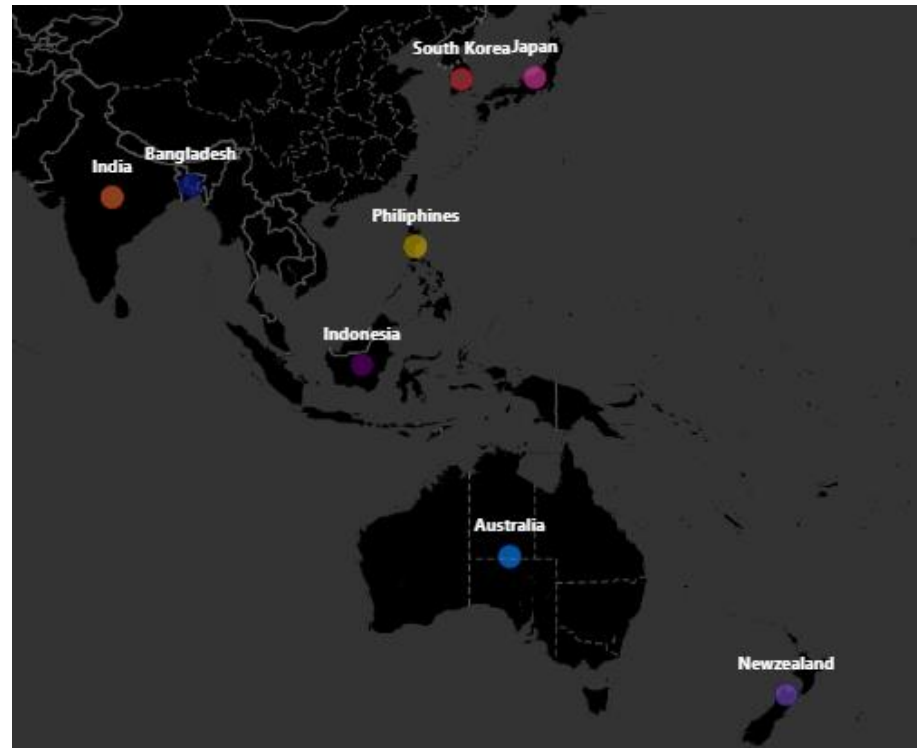
```
3  /*Req 1*/  
4  •  SELECT DISTINCT MARKET FROM dim_customer WHERE REGION = "APAC" AND CUSTOMER = "Atliq Exclusive";  
5
```

	MARKET
▶	India
	Indonesia
	Japan
	Philippines
	South Korea
	Australia
	Newzealand
	Bangladesh

Insights

Atliq Exclusive operates business in 8 major markets in the APAC region. Two other major markets remaining are Pakistan and China.

Visual



Request 2

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

Query and Output

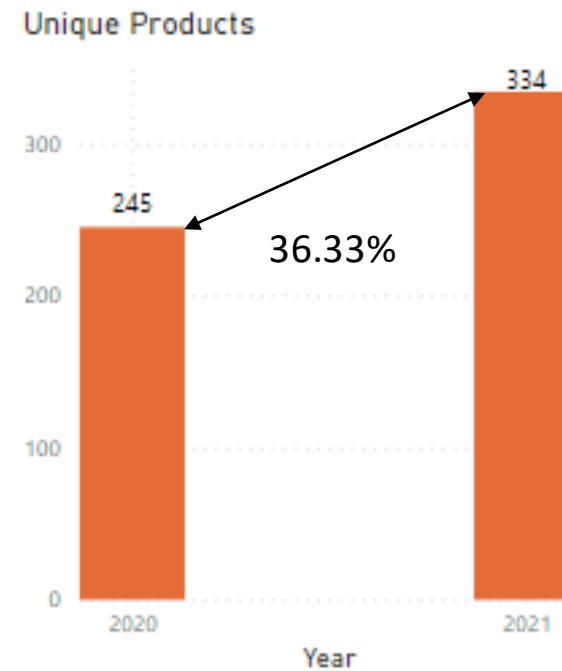
```
4      /*Req 2*/
5      WITH U1 AS
6      (
7      SELECT COUNT(DISTINCT PRODUCT_CODE) AS unique_product_2020, fiscal_year FROM FACT_SALES_MONTHLY
8      WHERE fiscal_year = "2020"
9      ),
10
11      U2 AS
12      (
13      SELECT COUNT(DISTINCT PRODUCT_CODE) AS unique_product_2021, fiscal_year FROM FACT_SALES_MONTHLY
14      WHERE fiscal_year = "2021"
15      )
16      SELECT U1.unique_product_2020, U2.unique_product_2021,
17      ROUND(((U2.unique_product_2021-U1.unique_product_2020)/(U1.unique_product_2020)),4)*100 AS percentage_chg
18      FROM U1 CROSS JOIN U2;
```

	unique_product_2020	unique_product_2021	percentage_chg
▶	245	334	36.3300

Insights

Substantial 36.33% increase in products shows that company has worked a lot for introducing new products in market.

Visuals



Request 3

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

Query and Output

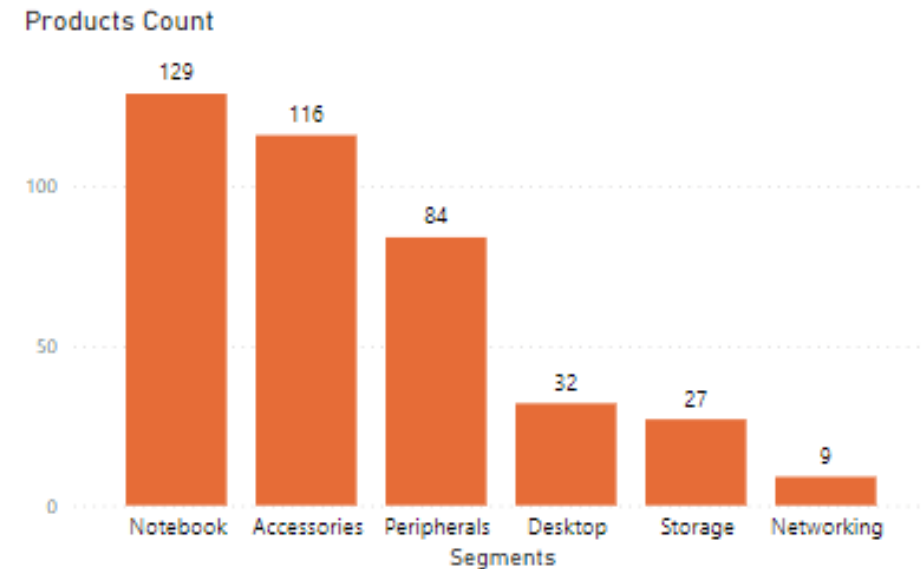
```
20 /*Req 3*/  
21 • SELECT segment, COUNT(DISTINCT product_code) AS product_count FROM dim_product  
22 GROUP BY segment ORDER BY product_count DESC;  
23  
24
```

Result Grid			Filter Rows:	Export:	Wrap Cell Content:
	segment	product_count			
▶	Notebook	129			
	Accessories	116			
	Peripherals	84			
	Desktop	32			
	Storage	27			
	Networking	9			

Insights

The Networking segment of the company sees the lowest product count whereas the Notebook segment sees the highest product count. We can conclude that due to high demand in networking segment company focussed more in sales and marketing of this segment.

Visuals



Request 4

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

Query and Output

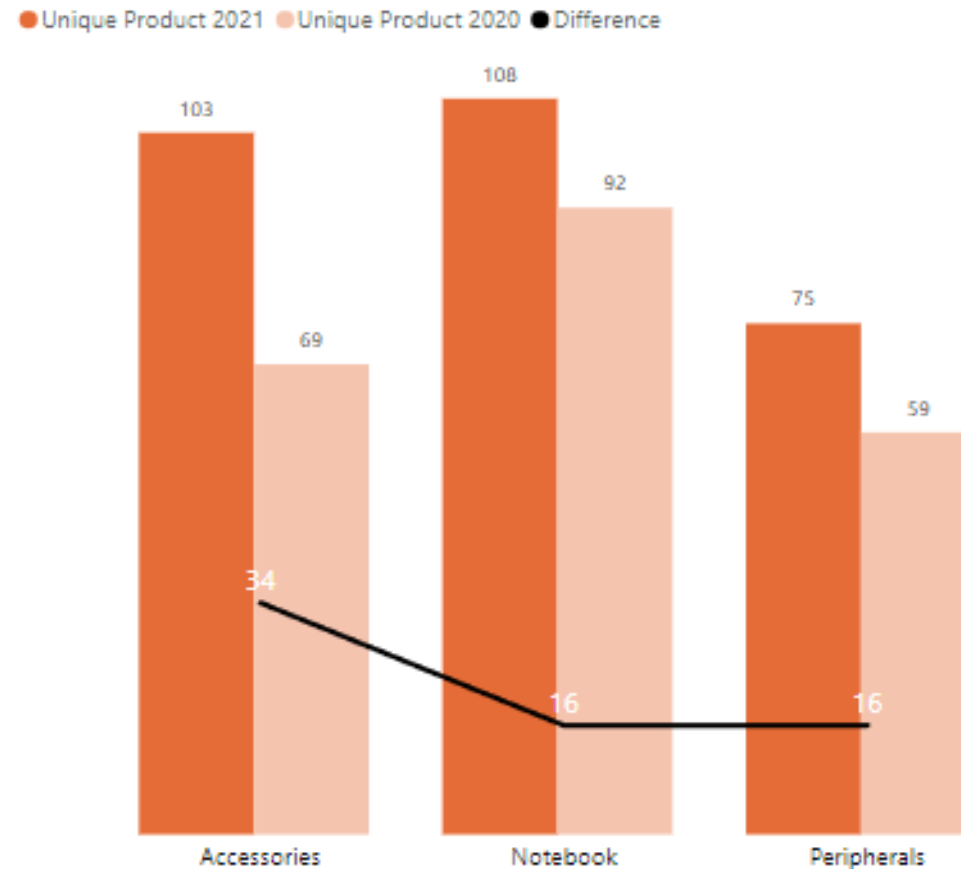
```
25  /*Req 4*/
26  • WITH US1 AS
27  (
28    SELECT dp.segment AS seg, COUNT(DISTINCT fsm.PRODUCT_CODE) AS unique_product_2020, fsm.fiscal_year
29    FROM FACT_SALES_MONTHLY AS fsm JOIN dim_product AS dp ON fsm.PRODUCT_CODE=dp.PRODUCT_CODE
30    WHERE fsm.fiscal_year = "2020"
31    GROUP BY dp.segment
32  ),
33
34  US2 AS
35  (
36    SELECT dp.segment AS seg, COUNT(DISTINCT fsm.PRODUCT_CODE) AS unique_product_2021, fsm.fiscal_year
37    FROM FACT_SALES_MONTHLY AS fsm JOIN dim_product AS dp ON fsm.PRODUCT_CODE=dp.PRODUCT_CODE
38    WHERE fsm.fiscal_year = "2021"
39    GROUP BY dp.segment
40  )
41  SELECT US2.seg AS segment, US1.unique_product_2020, US2.unique_product_2021,
42  ROUND(US2.unique_product_2021-US1.unique_product_2020) AS difference
43  FROM US1 JOIN US2 ON US1.seg = US2.seg
44  ORDER BY difference DESC LIMIT 3;
45
```

	segment	unique_product_2020	unique_product_2021	difference
►	Accessories	69	103	34
	Notebook	92	108	16
	Peripherals	59	75	16

Insights

In Accessories segment we see highest increase in unique products. Not only its unique products increased most but also the difference is twice compared second highest segments unique product increase.

Visuals



Request 5

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

Query and Output

```
46      /*Req 5*/
47 •    SELECT DISTINCT dp.product_code, dp.product, fmc.manufacturing_cost FROM fact_manufacturing_cost AS fmc JOIN dim_product AS dp
48      ON fmc.product_code = dp.product_code WHERE fmc.manufacturing_cost IN
49      ((SELECT MAX(manufacturing_cost) FROM fact_manufacturing_cost
50      UNION
51      SELECT MIN(manufacturing_cost) FROM fact_manufacturing_cost)) ORDER BY fmc.manufacturing_cost;
52
53      /*Req 6*/
54 •    SELECT MAX(fpid.customer_code) AS customer_code, dc.customer, ROUND(AVG(fpid.pre_invoice_discount_pct),4)
```

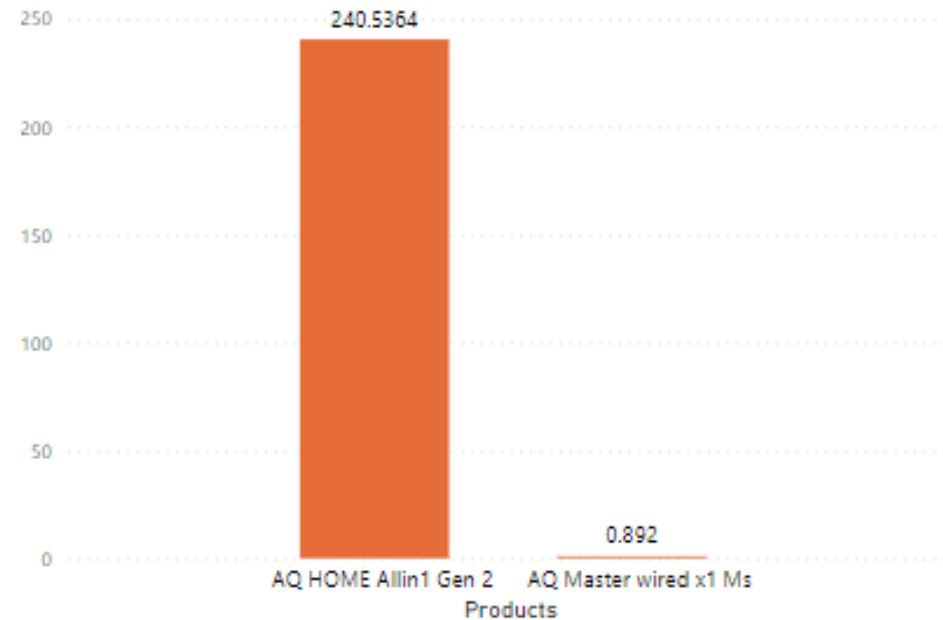
Result Grid	Filter Rows:	Export:	Wrap Cell Content:
product_code	product	manufacturing_cost	
A2118150101	AQ Master wired x1 Ms	0.8920	
A6120110206	AQ HOME Allin1 Gen 2	240.5364	

Insights

The manufacturing cost is higher for AQ Home Allin1 Gen 2, while AQ Master wired x1 Ms incurs the lowest manufacturing cost.

Visuals

Manufacturing Cost



Request 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.

Query and Output

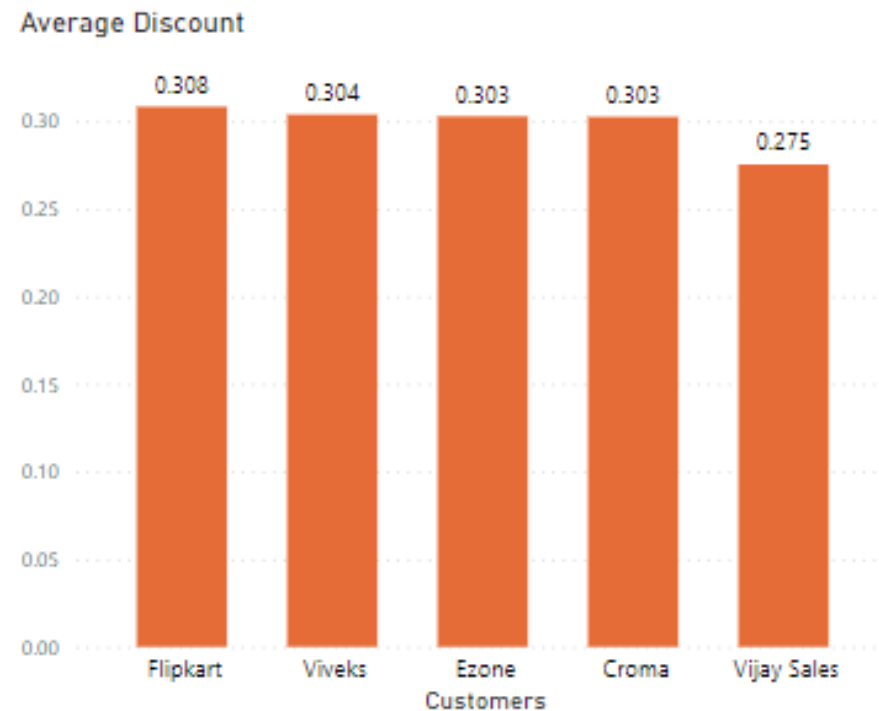
```
53  /*Req 6*/
54  •  SELECT MAX(fpid.customer_code) AS customer_code, dc.customer, ROUND(AVG(fpid.pre_invoice_discount_pct),4)
55  AS average_discount_percentage
56  FROM fact_pre_invoice_deductions AS fpid JOIN dim_customer AS dc
57  ON fpid.customer_code = dc.customer_code WHERE fpid.fiscal_year = "2021" AND dc.market = "India"
58  GROUP BY dc.customer
59  ORDER BY AVG(fpid.pre_invoice_discount_pct) DESC LIMIT 5;
```

	customer_code	customer	average_discount_percentage
►	90002009	Flipkart	0.3083
	90002006	Viveks	0.3038
	90002003	Ezone	0.3028
	90002002	Croma	0.3025
	90002004	Vijay Sales	0.2753

Insights

The average pre invoice discount percentage for the fiscal year 2021 and in the Indian market for the top 5 customers varies from 27.5% to 30.8%.

Visuals



Request 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.

Query and Output

```
61  /*Req 7*/
62  • SELECT MONTHNAME(fsm.date) AS Month, YEAR(fsm.date) AS Year, SUM(fsm.sold_quantity*fgp.gross_price) AS Gross_Sales_Amount
63  FROM fact_sales_monthly AS fsm JOIN fact_gross_price AS fgp
64  ON fsm.product_code = fgp.product_code AND fsm.fiscal_year = fgp.fiscal_year
65  JOIN dim_customer AS dc ON dc.customer_code = fsm.customer_code
66  WHERE dc.customer = "Atliq Exclusive"
67  GROUP BY Month, Year ORDER BY month(Month);
```

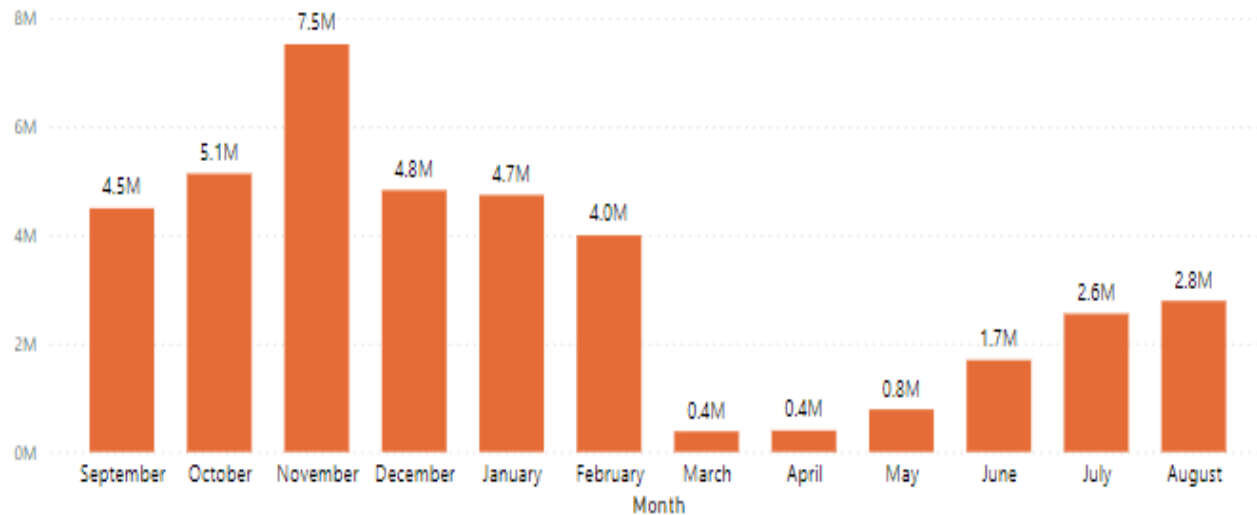
	Month	Year	Gross_Sales_Amount
►	September	2019	4496259.6724
	October	2019	5135902.3467
	November	2019	7522892.5608
	December	2019	4830404.7285
	January	2020	4740600.1605
	February	2020	3996227.7661
	March	2020	278720.0700

Insights

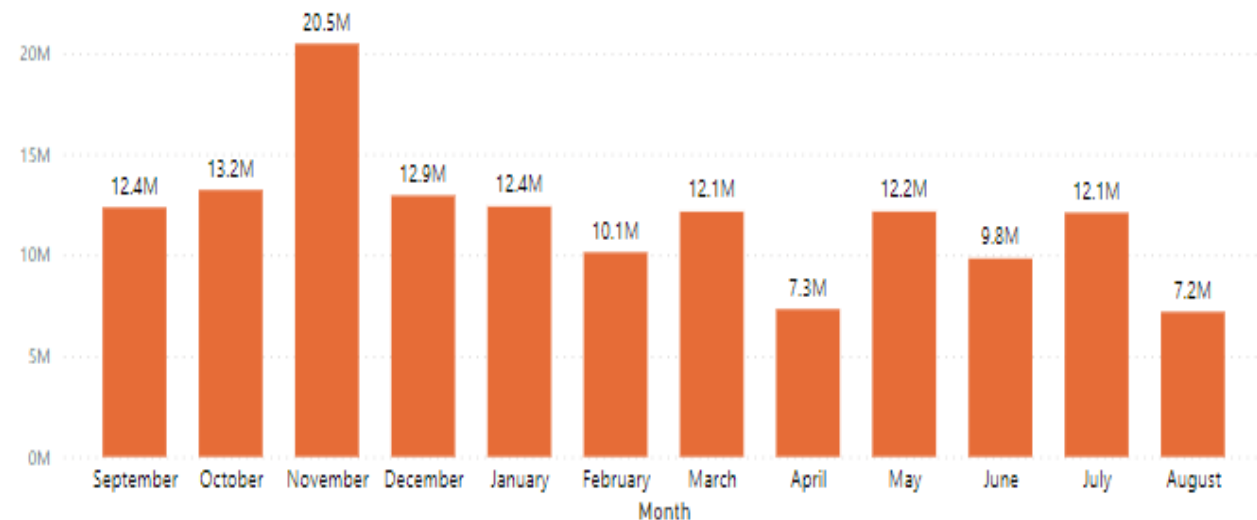
In November 2020 company achieved its peak monthly sales while March 2020 marked lowest monthly gross sales. The reason behind lowest gross sales can be first wave of COVID-19. But company recovered quickly and achieved its highest gross sales after 6 months.

Visuals

Gross Sales Amount for Fiscal Year 2020



Gross Sales Amount for Fiscal Year 2021



Request 8

In which quarter of 2020, got the maximum total_sold_quantity?

Query and Output

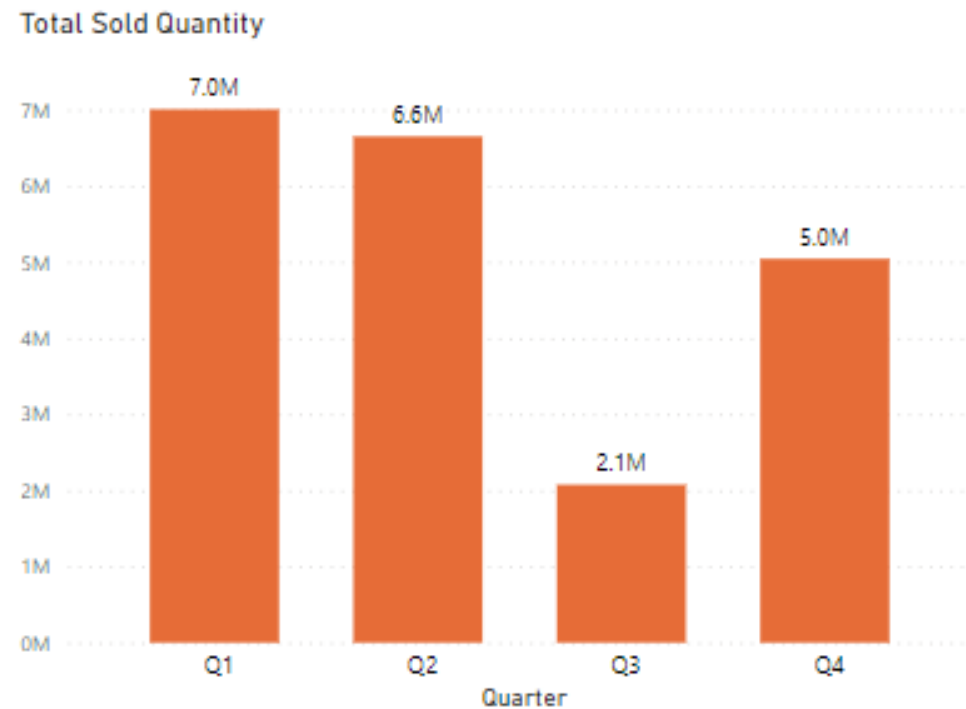
```
69  /*Req 8*/  
70  • SELECT CONCAT("Q",CEILING((MONTH(DATE_ADD(date, INTERVAL 4 MONTH)))/3)) AS Quarter,SUM(sold_quantity) AS total_sold_quantity  
71  FROM fact_sales_monthly WHERE fiscal_year = "2020"  
72  GROUP BY Quarter ORDER BY total_sold_quantity DESC;
```

	Quarter	total_sold_quantity
►	Q1	7005619
	Q2	6649642
	Q4	5042541
	Q3	2075087

Request 8

For the fiscal year 2020 Company sold maximum quantities of product in First Quarter.

Query and Output



Request 9

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

Query and Output

```
74  /*Req 9*/
75  • WITH ch AS
76  (
77    SELECT dc.channel as chan,
78    ROUND((SUM(fgp.gross_price*fsm.sold_quantity)/1000000),2)
79    AS gross_sales_mln
80    FROM fact_sales_monthly AS fsm JOIN fact_gross_price AS fgp ON
81    fsm.product_code = fgp.product_code AND fsm.fiscal_year = fgp.fiscal_year
82    JOIN dim_customer AS dc ON fsm.customer_code = dc.customer_code
83    WHERE fsm.fiscal_year = "2021"
84    GROUP BY dc.channel
85  )
86  SELECT DISTINCT ch.chan AS channel,ch.gross_sales_mln,
87  ROUND((ch.gross_sales_mln*100000000)/(SUM(fgp.gross_price*fsm.sold_quantity) OVER ()),2) AS percentage
88  FROM fact_sales_monthly AS fsm JOIN fact_gross_price AS fgp ON
89  fsm.product_code = fgp.product_code AND fsm.fiscal_year = fgp.fiscal_year
90  JOIN dim_customer AS dc ON fsm.customer_code = dc.customer_code
91  JOIN ch ON ch.chan = dc.channel
92  WHERE fsm.fiscal_year = "2021"
93  ORDER BY ch.gross_sales_mln DESC;
--
```

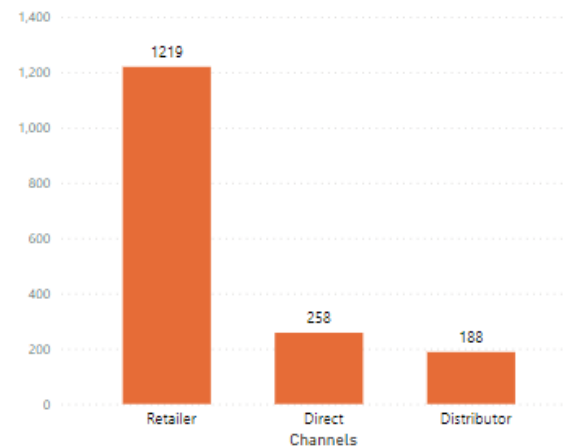
	channel	gross_sales_mln	percentage
▶	Retailer	1219.08	73.23
	Direct	257.53	15.47
	Distributor	188.03	11.30

Insights

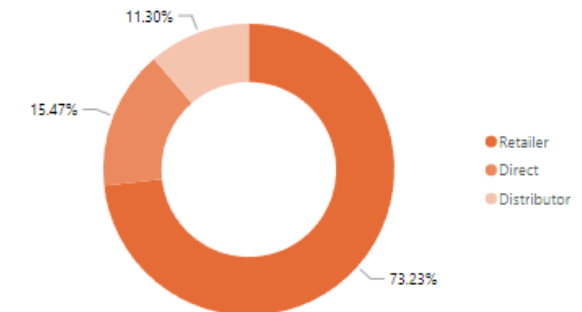
Retailer channel contributed in gross sales for year 2021 which is 73.23%. Distributers contributed least which is 11.30% but we should not ignore the fact that difference between distributor and direct channel is also very less.

Visuals

Gross Sales in Millions



Contribution in Percentage



Request 10

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

Query and Output

```
95      /*Req 10*/
96      SELECT * FROM (
97          WITH prd AS
98          (
99              SELECT DISTINCT dp.division, dp.product, dp.product_code,
100              SUM(fsm.sold_quantity) OVER(PARTITION BY dp.product) AS total_sold_quantity
101              FROM fact_sales_monthly AS fsm JOIN dim_product AS dp
102              ON fsm.product_code = dp.product_code
103              WHERE fsm.fiscal_year = "2021"
104          )
105          SELECT DISTINCT dp.division, dp.product, dp.product_code, prd.total_sold_quantity,
106          DENSE_RANK() OVER(PARTITION BY prd.division ORDER BY prd.total_sold_quantity DESC) AS rn
107          FROM fact_sales_monthly AS fsm JOIN dim_product AS dp
108          ON fsm.product_code = dp.product_code
109          JOIN prd ON prd.product_code = dp.product_code
110          WHERE fsm.fiscal_year = "2021"
111      ) x WHERE x.rn < 4;
112
```

	division	product	product_code	total_sold_quantity	rn
▶	N & S	AQ Pen Drive DRC	A6819160203	2034569	1
	N & S	AQ Pen Drive DRC	A6818160202	2034569	1
	N & S	AQ Pen Drive DRC	A6818160201	2034569	1
	N & S	AQ Digit SSD	A6218160101	1240149	2
	N & S	AQ Digit SSD	A6218160102	1240149	2

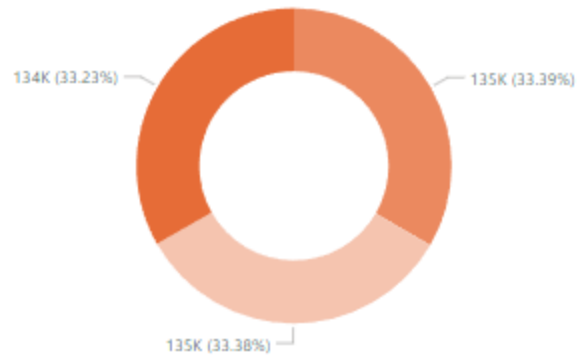
Insights

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

Visuals

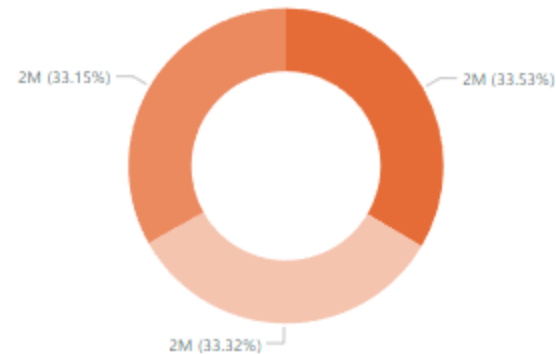
Top 3 Products for PC

Products ● AQ Digit ● AQ Gen Y ● AQ Elite



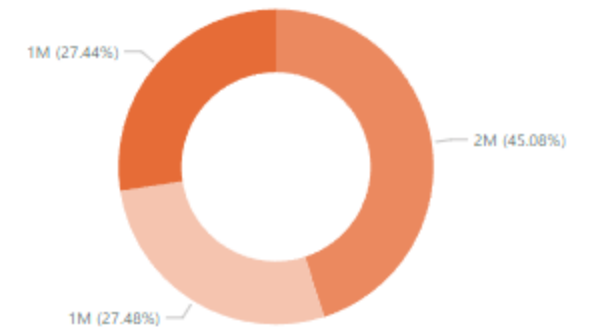
Top 3 Products for P & A

Products ● AQ Gamers Ms ● AQ Maxima Ms ● AQ Master wireless x1 Ms



Top 3 Products for N & S

Products ● AQ Pen Drive DRC ● AQ Digit SSD ● AQ Clx1





Thank You!