

Key Findings from Analysis

1) Find the number of stores in each country.

| | country | Total_Stores |
|----|-----------|--------------|
| 1 | UK | 10 |
| 2 | USA | 10 |
| 3 | Canada | 8 |
| 4 | China | 4 |
| 5 | Australia | 3 |
| 6 | Brazil | 2 |
| 7 | Japan | 2 |
| 8 | Turkey | 2 |
| 9 | UAE | 2 |
| 10 | France | 2 |

2) Calculate the total number of units sold by each store.

| | store_id | store_name | total_units_sold |
|----|----------|----------------------|------------------|
| 1 | ST-52 | Apple Mumbai | 24590 |
| 2 | ST-53 | Apple New Delhi | 24501 |
| 3 | ST-51 | Apple Seoul | 24469 |
| 4 | ST-14 | Apple Pacific Centre | 24349 |
| 5 | ST-54 | Apple Ankara | 24286 |
| 6 | ST-55 | Apple Istanbul | 24105 |
| 7 | ST-21 | Apple Orchard Road | 23094 |
| 8 | ST-23 | Apple Covent Garden | 23036 |
| 9 | ST-22 | Apple Regent Street | 23030 |
| 10 | ST-24 | Apple Bluewater | 22906 |

3) Identify how many sales occurred in December 2023.

| | total_sales |
|---|-------------|
| 1 | 29997 |

4) Determine how many stores have never had a warranty claim filed.

| | store_id | store_name |
|----|----------|--------------------------|
| 1 | ST-1 | Apple Fifth Avenue |
| 2 | ST-10 | Apple Tysons Corner |
| 3 | ST-11 | Apple Eaton Centre |
| 4 | ST-12 | Apple Yorkdale |
| 5 | ST-13 | Apple Square One |
| 6 | ST-14 | Apple Pacific Centre |
| 7 | ST-15 | Apple Chinook Centre |
| 8 | ST-16 | Apple Rideau Centre |
| 9 | ST-17 | Apple West Edmonton Mall |
| 10 | ST-18 | Apple CF Sherway Gardens |

5) Calculate the percentage of warranty claims marked as "Warranty Void".

| | percentage |
|---|------------|
| 1 | 23.1645 |

6) Identify which store had the highest total units sold in the last year.

| | store_id | store_name | total_sales |
|----|----------|---------------------|-------------|
| 1 | ST-52 | Apple Mumbai | 19680 |
| 2 | ST-53 | Apple New Delhi | 19606 |
| 3 | ST-51 | Apple Seoul | 19529 |
| 4 | ST-55 | Apple Istanbul | 19197 |
| 5 | ST-54 | Apple Ankara | 19197 |
| 6 | ST-21 | Apple Orchard Road | 3522 |
| 7 | ST-25 | Apple Munich | 3450 |
| 8 | ST-24 | Apple Bluewater | 3436 |
| 9 | ST-23 | Apple Covent Garden | 3394 |
| 10 | ST-22 | Apple Regent Street | 3376 |

7) Count the number of unique products sold in the last year.

| | product_id | product_name | total_sales |
|----|------------|--------------------------|-------------|
| 1 | P-63 | iPhone 15 Pro | 13138 |
| 2 | P-64 | iPhone 15 Pro Max | 13048 |
| 3 | P-62 | iPhone 15 | 12985 |
| 4 | P-55 | iPhone 14 | 11051 |
| 5 | P-54 | iPhone 14 Pro | 10922 |
| 6 | P-59 | iPad (10th Gen) | 10236 |
| 7 | P-60 | iPad Pro (M2, 11-inch) | 10180 |
| 8 | P-58 | AirPods Pro (2nd Gen) | 7486 |
| 9 | P-61 | iPad Pro (M2, 12.9-inch) | 7180 |
| 10 | P-56 | Apple Watch Series 8 | 5400 |

8) Find the average price of products in each category.

| | category_id | category_name | avg_price |
|----|-------------|----------------------|-----------|
| 1 | CAT-1 | Laptop | 1511.5 |
| 2 | CAT-7 | Desktop | 1199 |
| 3 | CAT-4 | Smartphone | 889.43 |
| 4 | CAT-3 | Tablet | 656.5 |
| 5 | CAT-5 | Wearable | 362.33 |
| 6 | CAT-2 | Audio | 259 |
| 7 | CAT-6 | Streaming Device | 179 |
| 8 | CAT-8 | Subscription Service | 149.5 |
| 9 | CAT-9 | Smart Speaker | 99 |
| 10 | CAT-10 | Accessory | 29 |

9) How many warranty claims were filed in 2020?

| | repair_status | warranty_claims |
|---|---------------|-----------------|
| 1 | Free Replaced | 1707 |
| 2 | Paid Repaired | 113 |
| 3 | Warranty Void | 930 |
| 4 | total_claims | 2750 |

10) Identify the best-selling day for each store.

| | store_id | store_name | best_selling_day | total_sales |
|----|----------|--------------------------|------------------|-------------|
| 1 | ST-1 | Apple Fifth Avenue | Sunday | 1100 |
| 2 | ST-10 | Apple Tysons Corner | Sunday | 1065 |
| 3 | ST-11 | Apple Eaton Centre | Saturday | 1095 |
| 4 | ST-12 | Apple Yorkdale | Sunday | 1073 |
| 5 | ST-13 | Apple Square One | Monday | 1085 |
| 6 | ST-14 | Apple Pacific Centre | Thursday | 3665 |
| 7 | ST-15 | Apple Chinook Centre | Monday | 2879 |
| 8 | ST-16 | Apple Rideau Centre | Monday | 2940 |
| 9 | ST-17 | Apple West Edmonton Mall | Thursday | 2837 |
| 10 | ST-18 | Apple CF Sherway Gardens | Sunday | 2865 |

11) Identify the least selling product in each country for each year.

| | product_id | product_name | total_sales | sale_year | country | rank |
|----|------------|------------------------|-------------|-----------|-----------|------|
| 1 | P-44 | iPhone 13 Mini | 16 | 2021 | Argentina | 1 |
| 2 | P-63 | iPhone 15 Pro | 99 | 2023 | Argentina | 1 |
| 3 | P-64 | iPhone 15 Pro Max | 99 | 2023 | Argentina | 1 |
| 4 | P-35 | Apple Fitness+ | 29 | 2020 | Australia | 1 |
| 5 | P-44 | iPhone 13 Mini | 37 | 2021 | Australia | 1 |
| 6 | P-59 | iPad (10th Gen) | 458 | 2022 | Australia | 1 |
| 7 | P-62 | iPhone 15 | 264 | 2023 | Australia | 1 |
| 8 | P-35 | Apple Fitness+ | 25 | 2020 | Brazil | 1 |
| 9 | P-44 | iPhone 13 Mini | 30 | 2021 | Brazil | 1 |
| 10 | P-60 | iPad Pro (M2, 11-inch) | 281 | 2022 | Brazil | 1 |
| 11 | P-62 | iPhone 15 | 180 | 2023 | Brazil | 1 |

12) Calculate how many warranty claims were filed within 180 days of a product sale.

| | warranty_claims |
|---|-----------------|
| 1 | 18745 |

13) Determine how many warranty claims were filed for products launched in the last two years.

| | product_name | warranty_claims | total_sales |
|---|------------------------|-----------------|-------------|
| 1 | AirPods Pro (2nd Gen) | 659 | 20807 |
| 2 | iPad (10th Gen) | 444 | 20687 |
| 3 | iPad Pro (M2, 11-inch) | 467 | 20747 |
| 4 | iPhone 14 | 986 | 31944 |
| 5 | iPhone 14 Pro | 946 | 31728 |
| 6 | iPhone 15 | 321 | 14875 |
| 7 | iPhone 15 Pro | 290 | 14954 |
| 8 | iPhone 15 Pro Max | 320 | 14860 |
| 9 | iPhone SE (3rd Gen) | 1885 | 8371 |

14) List the months in the last three years when sales did not exceed 5,000 units in the USA.

| | month | total_sales |
|----|---------|-------------|
| 1 | 01-2022 | 2392 |
| 2 | 01-2023 | 4318 |
| 3 | 02-2022 | 2174 |
| 4 | 02-2023 | 3908 |
| 5 | 03-2022 | 2835 |
| 6 | 03-2023 | 4469 |
| 7 | 04-2022 | 2463 |
| 8 | 04-2023 | 2474 |
| 9 | 05-2022 | 1007 |
| 10 | 09-2022 | 2929 |

15) Identify the product category with the most warranty claims filed in the last two years.

| | category_id | category_name | warranty_claims |
|---|-------------|----------------------|-----------------|
| 1 | CAT-4 | Smartphone | 8188 |
| 2 | CAT-3 | Tablet | 2638 |
| 3 | CAT-5 | Wearable | 978 |
| 4 | CAT-8 | Subscription Service | 940 |
| 5 | CAT-2 | Audio | 528 |
| 6 | CAT-10 | Accessory | 64 |
| 7 | CAT-1 | Laptop | 59 |
| 8 | CAT-7 | Desktop | 7 |
| 9 | CAT-6 | Streaming Device | 5 |

- 16) Determine the percentage chance of receiving warranty claims after each purchase for each country.

| | country | total_sales | warranty_claims | percentage_chance |
|----|------------|-------------|-----------------|-------------------|
| 1 | Argentina | 2794 | 0 | No Claim Chance |
| 2 | Australia | 19445 | 0 | No Claim Chance |
| 3 | Brazil | 12842 | 0 | No Claim Chance |
| 4 | Canada | 123089 | 0 | No Claim Chance |
| 5 | Chile | 5272 | 0 | No Claim Chance |
| 6 | China | 20895 | 0 | No Claim Chance |
| 7 | Costa Rica | 2848 | 0 | No Claim Chance |
| 8 | France | 29218 | 335 | 1.15 |
| 9 | Germany | 37573 | 641 | 1.71 |
| 10 | India | 49091 | 2241 | 4.56 |

- 17) Analyze the year-by-year growth rate for each store.

| | store_id | store_name | year | current_year_sales | previous_year_sales | growth_rate | status |
|----|----------|-----------------|------|--------------------|---------------------|-------------|---------|
| 1 | ST-27 | Apple Amsterdam | 2020 | 2,057,521 | 1,938,674 | 6.13 | GROWTH |
| 2 | ST-27 | Apple Amsterdam | 2021 | 3,011,823 | 2,057,521 | 46.38 | GROWTH |
| 3 | ST-27 | Apple Amsterdam | 2022 | 3,580,638 | 3,011,823 | 18.89 | GROWTH |
| 4 | ST-27 | Apple Amsterdam | 2023 | 1,454,241 | 3,580,638 | -59.39 | DECLINE |
| 5 | ST-27 | Apple Amsterdam | 2024 | 186,817 | 1,454,241 | -87.15 | DECLINE |
| 6 | ST-54 | Apple Ankara | 2021 | 1,472,404 | 1,888,289 | -22.02 | DECLINE |
| 7 | ST-54 | Apple Ankara | 2023 | 15,671,503 | 1,472,404 | 964.35 | GROWTH |
| 8 | ST-45 | Apple Bangkok | 2021 | 1,488,187 | 1,831,371 | -18.74 | DECLINE |
| 9 | ST-45 | Apple Bangkok | 2023 | 308,693 | 1,488,187 | -79.26 | DECLINE |
| 10 | ST-33 | Apple Barcelona | 2021 | 1,537,994 | 1,888,830 | -18.57 | DECLINE |
| 11 | ST-33 | Apple Barcelona | 2022 | 851,983 | 1,537,994 | -44.6 | DECLINE |
| 12 | ST-33 | Apple Barcelona | 2023 | 312,689 | 851,983 | -63.3 | DECLINE |

- 18) Calculate the correlation between product price and warranty claims for products sold in the last five years, segmented by price range.

| | product_range | price_range | total_warranty_claims |
|----|-------------------|-------------|-----------------------|
| 1 | LOW RANGE PRODUCT | 29 | 5097 |
| 2 | LOW RANGE PRODUCT | 99 | 74 |
| 3 | LOW RANGE PRODUCT | 120 | 36 |
| 4 | LOW RANGE PRODUCT | 179 | 1811 |
| 5 | LOW RANGE PRODUCT | 249 | 659 |
| 6 | LOW RANGE PRODUCT | 329 | 1906 |
| 7 | LOW RANGE PRODUCT | 399 | 1978 |
| 8 | LOW RANGE PRODUCT | 429 | 1885 |
| 9 | LOW RANGE PRODUCT | 449 | 444 |
| 10 | MID RANGE PRODUCT | 549 | 32 |

| | | | | | | | | | | | | | | | | | | | | | |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|----|-----|------|-----|------|------|------|-----|-----|------|------|-----|------|------|------|------|------|------|------|
| B4 | | =CORREL(B1:U1,B2:U2) | | | | | | | | | | | | | | | | | | | |
| | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U |
| 1 | Price range | 29 | 99 | 120 | 179 | 249 | 329 | 399 | 429 | 449 | 549 | 599 | 699 | 749 | 799 | 999 | 1099 | 1199 | 1299 | 1999 | 2499 |
| 2 | Warranty Claims | 5097 | 74 | 36 | 1811 | 659 | 1906 | 1978 | 1885 | 444 | 32 | 1374 | 2411 | 763 | 2250 | 4207 | 2220 | 320 | 381 | 668 | 675 |
| 3 | | | | | | | | | | | | | | | | | | | | | |
| 4 | CORRELATION | -0.18337 | | | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | | | | | |
| 6 | A correlation of -0.183 means that there is a slightly negative relationship between product price and warranty claims. | | | | | | | | | | | | | | | | | | | | |
| 7 | As the price of a product goes up, the number of warranty claims tends to go down just a little. | | | | | | | | | | | | | | | | | | | | |
| 8 | However, this relationship is very weak. It's not a strong trend, so the price of a product doesn't really have a big impact on how many warranty claims it gets. | | | | | | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | | | | | | |

19) Identify the store with the highest percentage of "Paid Repaired" claims relating to total claims filed.

| | store_id | store_name | total_claims | total_paid_repaired | percent_of_total_claims |
|----|----------|----------------------------|--------------|---------------------|-------------------------|
| 1 | ST-26 | Apple Kurfürstendamm | 160 | 60 | 37.5 |
| 2 | ST-28 | Apple Champs-Élysées | 151 | 53 | 35.099 |
| 3 | ST-24 | Apple Bluewater | 259 | 86 | 33.205 |
| 4 | ST-23 | Apple Covent Garden | 267 | 86 | 32.21 |
| 5 | ST-27 | Apple Amsterdam | 163 | 52 | 31.902 |
| 6 | ST-22 | Apple Regent Street | 1214 | 377 | 31.054 |
| 7 | ST-25 | Apple Munich | 481 | 147 | 30.561 |
| 8 | ST-29 | Apple Lyon | 184 | 50 | 27.174 |
| 9 | ST-30 | Apple Milan | 1691 | 417 | 24.66 |
| 10 | ST-31 | Apple Dubai Mall | 5838 | 1427 | 24.443 |
| 11 | ST-32 | Apple Mall of the Emirates | 5978 | 771 | 12.897 |

20) Write a query to calculate the monthly running total of sales for each store over the past four years and compare trends.

| | store_id | store_name | month | year | revenue | running_total |
|----|----------|-----------------|-----------|------|---------|---------------|
| 1 | ST-27 | Apple Amsterdam | January | 2019 | 103,117 | 103,117 |
| 2 | ST-27 | Apple Amsterdam | February | 2019 | 156,066 | 259,183 |
| 3 | ST-27 | Apple Amsterdam | March | 2019 | 188,670 | 447,853 |
| 4 | ST-27 | Apple Amsterdam | April | 2019 | 99,757 | 547,610 |
| 5 | ST-27 | Apple Amsterdam | May | 2019 | 131,395 | 679,005 |
| 6 | ST-27 | Apple Amsterdam | June | 2019 | 115,103 | 794,108 |
| 7 | ST-27 | Apple Amsterdam | July | 2019 | 124,232 | 918,340 |
| 8 | ST-27 | Apple Amsterdam | August | 2019 | 164,224 | 1,082,564 |
| 9 | ST-27 | Apple Amsterdam | September | 2019 | 170,583 | 1,253,147 |
| 10 | ST-27 | Apple Amsterdam | October | 2019 | 194,750 | 1,447,897 |
| 11 | ST-27 | Apple Amsterdam | November | 2019 | 250,056 | 1,697,953 |
| 12 | ST-27 | Apple Amsterdam | December | 2019 | 240,721 | 1,938,674 |
| 13 | ST-27 | Apple Amsterdam | January | 2020 | 339,404 | 2,278,078 |
| 14 | ST-27 | Apple Amsterdam | February | 2020 | 320,381 | 2,598,459 |

- 21) Analyze product sales trends over time, segmented into key periods: from launch to 6 months, 6-12 months, 12-18 months, and beyond 18 months.

| product_name | launch_sale_interval | total_sales |
|-------------------|----------------------|-------------|
| iPhone 14 | 0-6 months | 26487 |
| iPhone 14 | 6-12 months | 3783 |
| iPhone 14 | 12-18 months | 1674 |
| iPhone 14 Pro | 0-6 months | 26362 |
| iPhone 14 Pro | 6-12 months | 3722 |
| iPhone 14 Pro | 12-18 months | 1644 |
| iPhone 15 | 0-6 months | 14104 |
| iPhone 15 | 6-12 months | 771 |
| iPhone 15 Pro | 0-6 months | 14241 |
| iPhone 15 Pro | 6-12 months | 713 |
| iPhone 15 Pro Max | 0-6 months | 14171 |
| iPhone 15 Pro Max | 6-12 months | 689 |

