**Excel Project – Creating a Dashboard in MS Excel**:

**Excel Spreadsheet Background**: I watched a YouTube video to build an interactive dashboard in Excel and downloaded a spreadsheet from the Channel's GitHub website containing information about coffee orders, customers, and products. I have put the Channel's URL video and GitHub site on the last page for reference.

**Objective**: The goal of this project consisted of three parts:

- First to collect data from various worksheets using logical and lookup functions such as IF, XLOOKUP, INDEX and MATCH, and formatting the data as a table for multiple purposes.
- Secondly to insert Pivot Tables and charts on different worksheets and summarize data to find out the number of sales by date, country, and top 5 customers.
- Finally, paste the charts into a new Dashboard worksheet and analyze charts using slicers and timelines.

**customers**

| Customer ID | Customer Name | Email | Phone Number | Address Line 1 | City | Country | Postcode | Loyalty Card |
|---|---|---|---|---|---|---|---|---|
| 17670-51384-MA | Aloisia Allner | aallner0@lulu.com | +1 (862) 817-0124 | 57999 Pepper Wood Alley | Paterson | United States | 7505 | Yes |
| 73342-18763-UW | Piotr Bote | pbote1@yelp.com | +353 (913) 396-4653 | 2112 Ridgeway Hill | Crumlin | Ireland | D6W | No |
| 21125-22134-PX | Jami Redholes | jredholes2@tmall.com | +1 (210) 986-6806 | 5214 Bartillon Park | San Antonio | United States | 78205 | Yes |
| 71253-00052-RN | Dene Azema | dazema3@facebook.com | +1 (217) 418-0714 | 27 Maywood Place | Springfield | United States | 62711 | Yes |
| 23806-46781-OU | Christoffer O' Shea | | +353 (698) 362-9201 | 38980 Manitowish Junction | Cill Airne | Ireland | N41 | No |
| 86561-91660-RB | Beryle Cottier | | +1 (570) 289-7473 | 2651 Stoughton Place | Scranton | United States | 18505 | No |
| 65223-29612-CB | Shaylynn Lobe | slobe6@nifty.com | +1 (937) 954-4541 | 7005 Mariners Cove Place | Dayton | United States | 45440 | Yes |
| 21134-81676-FR | Melvin Wharfe | | +353 (507) 574-3034 | 7 Straubel Road | Kill | Ireland | P24 | Yes |
| 03396-68805-ZC | Guthrey Petracci | gpetracci8@livejournal.com | +1 (310) 868-1842 | 949 Paget Parkway | Los Angeles | United States | 90045 | No |
| 61021-27840-ZN | Rodger Raven | rraven9@ed.gov | +1 (213) 263-0288 | 1 Reinke Avenue | Los Angeles | United States | 90065 | No |
| 76239-90137-UQ | Ferrell Ferber | fferbera@businesswire.com | +1 (408) 383-5302 | 68 High Crossing Court | San Jose | United States | 95160 | No |
| 49315-21985-BB | Duky Phizackerly | dphizackerlyb@utexas.edu | +1 (408) 533-6012 | 28643 Bluejay Crossing | San Jose | United States | 95194 | Yes |
| 34136-36674-OM | Rosaleen Scholar | rscholarc@nyu.edu | +1 (804) 420-0420 | 80915 Montana Park | Richmond | United States | 23285 | No |
| 39396-12890-PE | Terence Vanyutin | tvanyutind@wix.com | | 331 Bunting Hill | Migrate | United States | 41905 | No |
| 95875-73336-RG | Patrice Trobe | ptrobee@wunderground.com | +1 (314) 240-7896 | 827 Declaration Plaza | Saint Louis | United States | 63131 | Yes |
| 25473-43727-BY | Llywellyn Oscroft | loscroftf@ebay.co.uk | | 022 Roth Place | Philadelphia | United States | 19172 | No |
| 99643-51048-IQ | Minni Alabaster | malabasterg@hexun.com | +1 (971) 483-6255 | 3 Charing Cross Trail | Portland | United States | 97271 | No |
| 62173-15287-CU | Rhianon Broxup | rbroxuph@jimdo.com | +1 (713) 663-1338 | 83517 Thierer Court | Houston | United States | 77240 | No |
| 57611-05522-ST | Pall Redford | predfordi@ow.ly | | 7337 Hayes Junction | Caherconlish | Ireland | F45 | Yes |
| 76664-37050-DT | Aurea Corradino | acorradinoj@harvard.edu | +1 (646) 202-5965 | 698 Canary Terrace | New York City | United States | 10060 | Yes |
| 84565-53984-SX | Kendal Scardefield | | +353 (733) 405-3302 | 3 Northridge Crossing | Clondalkin | Ireland | D24 | Yes |
| 03090-88267-BQ | Avrit Davidowsky | adavidowskyl@netvibes.com | +1 (616) 481-9962 | 9 Warrior Junction | Grand Rapids | United States | 49560 | No |
| 37651-47492-NC | Annabel Antuk | aantukm@kickstarter.com | +1 (941) 740-6268 | 77965 Lawn Park | Punta Gorda | United States | 33982 | Yes |
| 95399-57205-HI | Iorgo Kleinert | ikleinertn@timesonline.co.uk | +1 (360) 352-6598 | 1 Morningstar Lane | Vancouver | United States | 98682 | Yes |
| 24010-66714-HW | Chrisy Blofeld | cblofeldo@amazon.co.uk | +1 (303) 936-3357 | 013 Talisman Terrace | Englewood | United States | 80150 | No |
| 07591-92789-UA | Culley Farris | | +1 (941) 267-4822 | 4 Mitchell Drive | Punta Gorda | United States | 33982 | Yes |
| 49231-44455-IC | Selene Shales | sshalesq@umich.edu | +1 (707) 881-5004 | 74 Bultman Plaza | Petaluma | United States | 94975 | Yes |
| 50124-88608-EO | Vivie Danneil | vdanneilr@mtv.com | +353 (751) 346-0399 | 5626 Darwin Avenue | Tralee | Ireland | V92 | No |
| 00888-74814-UZ | Theresita Newbury | tnewburys@usda.gov | +353 (803) 587-0026 | 79526 Bultman Lane | Clonskeagh | Ireland | D04 | No |
| 14158-30713-OB | Mozelle Calcutt | mcalcuttt@baidu.com | +353 (928) 869-1762 | 4389 Russell Way | Rathwire | Ireland | Y25 | Yes |
| 51427-89175-QJ | Adrian Swaine | | +1 (303) 486-9517 | 95 Straubel Hill | Aurora | United States | 80044 | No |
| 52082-49024-ON | Ray Leivesley | rleivesleyv@canalblog.com | +1 (212) 535-7791 | 91 Stephen Drive | Jamaica | United States | 11407 | No |
| 04540-43685-DV | Nelly Basezzi | nbasezziw@webeden.co.uk | +353 (125) 815-7345 | 923 Mallard Junction | Bailieborough | Ireland | C15 | Yes |
| 39123-12846-YJ | Gallard Gatheral | ggatheralx@123-reg.co.uk | | 40 Clemons Place | Grand Forks | United States | 58207 | No |
| 44981-99666-XB | Una Welberry | uwelberryy@ebay.co.uk | +44 (392) 503-8132 | 40915 Schlimgen Park | Upton | United Kingdom | DN21 | Yes |
| 24825-51803-CQ | Faber Eilhart | feilhartz@who.int | +1 (304) 510-6095 | 6966 Victoria Street | Charleston | United States | 25362 | No |

**products**

| Product ID | Coffee Type | Roast Type | Size | Unit Price | Price per 100g | Profit |
|---|---|---|---|---|---|---|
| A-L-0.2 | Ara | L | 0.2 | 3.885 | 1.9425 | 0.34965 |
| A-L-0.5 | Ara | L | 0.5 | 7.77 | 1.554 | 0.6993 |
| A-L-1 | Ara | L | 1.0 | 12.95 | 1.295 | 1.1655 |
| A-L-2.5 | Ara | L | 2.5 | 29.785 | 1.1914 | 2.68065 |
| A-M-0.2 | Ara | M | 0.2 | 3.375 | 1.6875 | 0.30375 |
| A-M-0.5 | Ara | M | 0.5 | 6.75 | 1.35 | 0.6075 |
| A-M-1 | Ara | M | 1.0 | 11.25 | 1.125 | 1.0125 |
| A-M-2.5 | Ara | M | 2.5 | 25.875 | 1.035 | 2.32875 |
| A-D-0.2 | Ara | D | 0.2 | 2.985 | 1.4925 | 0.26865 |
| A-D-0.5 | Ara | D | 0.5 | 5.97 | 1.194 | 0.5373 |
| A-D-1 | Ara | D | 1.0 | 9.95 | 0.995 | 0.8955 |
| A-D-2.5 | Ara | D | 2.5 | 22.885 | 0.9154 | 2.05965 |
| R-L-0.2 | Rob | L | 0.2 | 3.585 | 1.7925 | 0.2151 |
| R-L-0.5 | Rob | L | 0.5 | 7.17 | 1.434 | 0.4302 |
| R-L-1 | Rob | L | 1.0 | 11.95 | 1.195 | 0.717 |
| R-L-2.5 | Rob | L | 2.5 | 27.485 | 1.0994 | 1.6491 |
| R-M-0.2 | Rob | M | 0.2 | 2.985 | 1.4925 | 0.1791 |
| R-M-0.5 | Rob | M | 0.5 | 5.97 | 1.194 | 0.3582 |
| R-M-1 | Rob | M | 1.0 | 9.95 | 0.995 | 0.597 |
| R-M-2.5 | Rob | M | 2.5 | 22.885 | 0.9154 | 1.3731 |
| R-D-0.2 | Rob | D | 0.2 | 2.685 | 1.3425 | 0.1611 |
| R-D-0.5 | Rob | D | 0.5 | 5.37 | 1.074 | 0.3222 |
| R-D-1 | Rob | D | 1.0 | 8.95 | 0.895 | 0.537 |
| R-D-2.5 | Rob | D | 2.5 | 20.585 | 0.8234 | 1.2351 |
| L-L-0.2 | Lib | L | 0.2 | 4.755 | 2.3775 | 0.61815 |
| L-L-0.5 | Lib | L | 0.5 | 9.51 | 1.902 | 1.2363 |
| L-L-1 | Lib | L | 1.0 | 15.85 | 1.585 | 2.0605 |
| L-L-2.5 | Lib | L | 2.5 | 36.455 | 1.4582 | 4.73915 |
| L-M-0.2 | Lib | M | 0.2 | 4.365 | 2.1825 | 0.56745 |
| L-M-0.5 | Lib | M | 0.5 | 8.73 | 1.746 | 1.1349 |
| L-M-1 | Lib | M | 1.0 | 14.55 | 1.455 | 1.8915 |
| L-M-2.5 | Lib | M | 2.5 | 33.465 | 1.3386 | 4.35045 |
| L-D-0.2 | Lib | D | 0.2 | 3.885 | 1.9425 | 0.50505 |
| L-D-0.5 | Lib | D | 0.5 | 7.77 | 1.554 | 1.0101 |
| L-D-1 | Lib | D | 1.0 | 12.95 | 1.295 | 1.6835 |
| L-D-2.5 | Lib | D | 2.5 | 29.785 | 1.1914 | 3.87205 |

**Steps taken**:

1. The first step in this project was to populate data in the Customer Name (F), Email (G) and Country (H) columns in the Orders tab using the XLOOKUP function from the Customers tab. To eliminate inconsistent values such as "0", I found the IF function of great use too:

| F2 | ✓ ✗ fx | =IF(XLOOKUP(C2,customers!$A$1:$A$1001,customers!$B$1:$B$1001,,0)=0,"",XLOOKUP(C2,customers!$A$1:$A$1001,customers!$B$1:$B$1001,,0)) |
| --- | --- | --- |

| | C | F |
| --- | --- | --- |
| 1 | Customer ID | Customer Name |
| 2 | 17670-51384-MA | =IF(XLOOKUP(C2,customers!$A$1:$A$1001,customers!$B$1:$B$1001,,0)=0,"",XLOOKUP(C2,customers!$A$1:$A$1001,customers!$B$1:$B$1001,,0)) |
| 3 | 17670-51384-MA | =IF(XLOOKUP(C3,customers!$A$1:$A$1001,customers!$B$1:$B$1001,,0)=0,"",XLOOKUP(C3,customers!$A$1:$A$1001,customers!$B$1:$B$1001,,0)) |
| 4 | 21125-22134-PX | =IF(XLOOKUP(C4,customers!$A$1:$A$1001,customers!$B$1:$B$1001,,0)=0,"",XLOOKUP(C4,customers!$A$1:$A$1001,customers!$B$1:$B$1001,,0)) |
| 5 | 23806-46781-OU | =IF(XLOOKUP(C5,customers!$A$1:$A$1001,customers!$B$1:$B$1001,,0)=0,"",XLOOKUP(C5,customers!$A$1:$A$1001,customers!$B$1:$B$1001,,0)) |
| 6 | 23806-46781-OU | =IF(XLOOKUP(C6,customers!$A$1:$A$1001,customers!$B$1:$B$1001,,0)=0,"",XLOOKUP(C6,customers!$A$1:$A$1001,customers!$B$1:$B$1001,,0)) |
| 7 | 86561-91660-RB | =IF(XLOOKUP(C7,customers!$A$1:$A$1001,customers!$B$1:$B$1001,,0)=0,"",XLOOKUP(C7,customers!$A$1:$A$1001,customers!$B$1:$B$1001,,0)) |
| 8 | 65223-29612-CB | =IF(XLOOKUP(C8,customers!$A$1:$A$1001,customers!$B$1:$B$1001,,0)=0,"",XLOOKUP(C8,customers!$A$1:$A$1001,customers!$B$1:$B$1001,,0)) |
| 9 | 21134-81676-FR | =IF(XLOOKUP(C9,customers!$A$1:$A$1001,customers!$B$1:$B$1001,,0)=0,"",XLOOKUP(C9,customers!$A$1:$A$1001,customers!$B$1:$B$1001,,0)) |
| 10 | 03396-68805-ZC | =IF(XLOOKUP(C10,customers!$A$1:$A$1001,customers!$B$1:$B$1001,,0)=0,"",XLOOKUP(C10,customers!$A$1:$A$1001,customers!$B$1:$B$1001,,0)) |
| 11 | 61021-27840-ZN | =IF(XLOOKUP(C11,customers!$A$1:$A$1001,customers!$B$1:$B$1001,,0)=0,"",XLOOKUP(C11,customers!$A$1:$A$1001,customers!$B$1:$B$1001,,0)) |

| SUM | ✓ ✗ fx | =IF(XLOOKUP(C2,customers!$A$1:$A$1001,customers!$C$1:$C$1001,,0)=0,"",XLOOKUP(C2,customers!$A$1:$A$1001,customers!$C$1:$C$1001,,0)) |
| --- | --- | --- |

| | C | G |
| --- | --- | --- |
| 1 | Customer ID | Email |
| 2 | 17670-51384-MA | =IF(XLOOKUP(C2,customers!$A$1:$A$1001,customers!$C$1:$C$1001,,0)=0,"",XLOOKUP(C2,customers!$A$1:$A$1001,customers!$C$1:$C$1001,,0)) |
| 3 | 17670-51384-MA | =IF((XLOOKUP(lookup_value, **lookup_array**, return_array, [if_not_found], [match_mode], [search_mode]))ustomers!$A$1:$A$1001,customers!$C$1:$C$1001,,0)) |
| 4 | 21125-22134-PX | =IF(XLOOKUP(C4,customers!$A$1:$A$1001,customers!$C$1:$C$1001,,0)=0,"",XLOOKUP(C4,customers!$A$1:$A$1001,customers!$C$1:$C$1001,,0)) |
| 5 | 23806-46781-OU | =IF(XLOOKUP(C5,customers!$A$1:$A$1001,customers!$C$1:$C$1001,,0)=0,"",XLOOKUP(C5,customers!$A$1:$A$1001,customers!$C$1:$C$1001,,0)) |
| 6 | 23806-46781-OU | =IF(XLOOKUP(C6,customers!$A$1:$A$1001,customers!$C$1:$C$1001,,0)=0,"",XLOOKUP(C6,customers!$A$1:$A$1001,customers!$C$1:$C$1001,,0)) |
| 7 | 86561-91660-RB | =IF(XLOOKUP(C7,customers!$A$1:$A$1001,customers!$C$1:$C$1001,,0)=0,"",XLOOKUP(C7,customers!$A$1:$A$1001,customers!$C$1:$C$1001,,0)) |
| 8 | 65223-29612-CB | =IF(XLOOKUP(C8,customers!$A$1:$A$1001,customers!$C$1:$C$1001,,0)=0,"",XLOOKUP(C8,customers!$A$1:$A$1001,customers!$C$1:$C$1001,,0)) |
| 9 | 21134-81676-FR | =IF(XLOOKUP(C9,customers!$A$1:$A$1001,customers!$C$1:$C$1001,,0)=0,"",XLOOKUP(C9,customers!$A$1:$A$1001,customers!$C$1:$C$1001,,0)) |
| 10 | 03396-68805-ZC | =IF(XLOOKUP(C10,customers!$A$1:$A$1001,customers!$C$1:$C$1001,,0)=0,"",XLOOKUP(C10,customers!$A$1:$A$1001,customers!$C$1:$C$1001,,0)) |

| H2 | ✓ ✗ fx | =IF(XLOOKUP(C2,customers!$A$1:$A$1001,customers!$G$1:$G$1001,,0)=0,"",XLOOKUP(C2,customers!$A$1:$A$1001,customers!$G$1:$G$1001,,0)) |
| --- | --- | --- |

| | C | H |
| --- | --- | --- |
| 1 | Customer ID | Country |
| 2 | 17670-51384-MA | =IF(XLOOKUP(C2,customers!$A$1:$A$1001,customers!$G$1:$G$1001,,0)=0,"",XLOOKUP(C2,customers!$A$1:$A$1001,customers!$G$1:$G$1001,,0)) |
| 3 | 17670-51384-MA | =IF(XLOOKUP(C3,customers!$A$1:$A$1001,customers!$G$1:$G$1001,,0)=0,"",XLOOKUP(C3,customers!$A$1:$A$1001,customers!$G$1:$G$1001,,0)) |
| 4 | 21125-22134-PX | =IF(XLOOKUP(C4,customers!$A$1:$A$1001,customers!$G$1:$G$1001,,0)=0,"",XLOOKUP(C4,customers!$A$1:$A$1001,customers!$G$1:$G$1001,,0)) |
| 5 | 23806-46781-OU | =IF(XLOOKUP(C5,customers!$A$1:$A$1001,customers!$G$1:$G$1001,,0)=0,"",XLOOKUP(C5,customers!$A$1:$A$1001,customers!$G$1:$G$1001,,0)) |
| 6 | 23806-46781-OU | =IF(XLOOKUP(C6,customers!$A$1:$A$1001,customers!$G$1:$G$1001,,0)=0,"",XLOOKUP(C6,customers!$A$1:$A$1001,customers!$G$1:$G$1001,,0)) |
| 7 | 86561-91660-RB | =IF(XLOOKUP(C7,customers!$A$1:$A$1001,customers!$G$1:$G$1001,,0)=0,"",XLOOKUP(C7,customers!$A$1:$A$1001,customers!$G$1:$G$1001,,0)) |
| 8 | 65223-29612-CB | =IF(XLOOKUP(C8,customers!$A$1:$A$1001,customers!$G$1:$G$1001,,0)=0,"",XLOOKUP(C8,customers!$A$1:$A$1001,customers!$G$1:$G$1001,,0)) |
| 9 | 21134-81676-FR | =IF(XLOOKUP(C9,customers!$A$1:$A$1001,customers!$G$1:$G$1001,,0)=0,"",XLOOKUP(C9,customers!$A$1:$A$1001,customers!$G$1:$G$1001,,0)) |
| 10 | 03396-68805-ZC | =IF(XLOOKUP(C10,customers!$A$1:$A$1001,customers!$G$1:$G$1001,,0)=0,"",XLOOKUP(C10,customers!$A$1:$A$1001,customers!$G$1:$G$1001,,0)) |
| 11 | 61021-27840-ZN | =IF(XLOOKUP(C11,customers!$A$1:$A$1001,customers!$G$1:$G$1001,,0)=0,"",XLOOKUP(C11,customers!$A$1:$A$1001,customers!$G$1:$G$1001,,0)) |

| | A | B | C | D | E | F | G | H |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | Order ID | Order Date | Customer ID | Product ID | Quantity | Customer Name | Email | Country |
| 2 | QEV-37451-860 | 43713 | 17670-51384-MA | R-M-1 | 2 | Aloisia Allner | aallner0@lulu.com | United States |
| 3 | QEV-37451-860 | 43713 | 17670-51384-MA | E-M-0.5 | 5 | Aloisia Allner | aallner0@lulu.com | United States |
| 4 | FAA-43335-268 | 44364 | 21125-22134-PX | A-L-1 | 1 | Jami Redholes | jredholes2@tmall.com | United States |
| 5 | KAC-83089-793 | 44392 | 23806-46781-OU | E-M-1 | 2 | Christoffer O' Shea | | Ireland |
| 6 | KAC-83089-793 | 44392 | 23806-46781-OU | R-L-2.5 | 2 | Christoffer O' Shea | | Ireland |
| 7 | CVP-18956-553 | 44412 | 86561-91660-RB | L-D-1 | 3 | Beryle Cottier | | United States |
| 8 | IPP-31994-879 | 44582 | 65223-29612-CB | E-D-0.5 | 3 | Shaylynn Lobe | slobe6@nifty.com | United States |
| 9 | SNZ-65340-705 | 44701 | 21134-81676-FR | L-L-0.2 | 1 | Melvin Wharfe | | Ireland |
| 10 | EZT-46571-659 | 43467 | 03396-68805-ZC | R-M-0.5 | 3 | Guthrey Petracci | gpetracci8@livejournal.com | United States |
| 11 | NWQ-70061-912 | 43713 | 61021-27840-ZN | R-M-0.5 | 1 | Rodger Raven | rraven9@ed.gov | United States |

2. For the next step, I used the INDEX and MATCH functions to populate data in the Coffee Type (I), Roast Type (J), Size (K) and Unit Price (L) columns from the Products tab.
   First, I opened an INDEX formula to indicate the array table in the Products tab, and then used the MATCH formula to indicate the row and column numbers which would be used inside. Using locks in rows and columns was also essential to drag and populate the required data into cells "I1" through "L1001":

**Cell I2:** `=INDEX(products!$A$1:$G$49,MATCH(orders!$D2,products!$A$1:$A$49,0), MATCH(orders!I$1,products!$A$1:$G$1,0))`

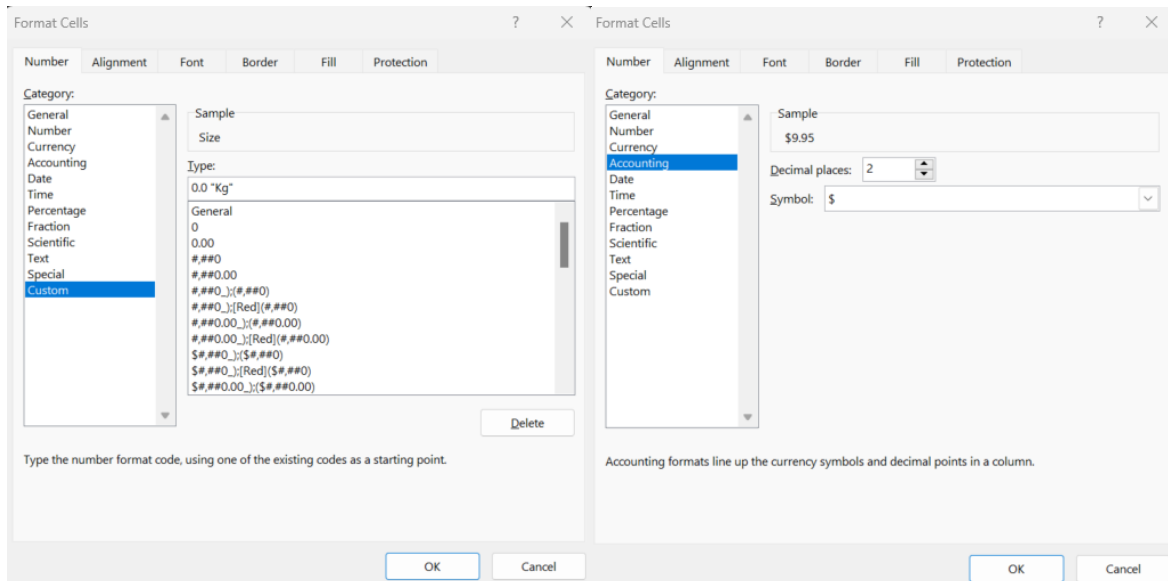| | D | E | I |
|---|---|---|---|
| 1 | Product ID | Quantity | Coffee Type |
| 2 | R-M-1 | 2 | =INDEX(products!$A$1:$G$49,MATCH(orders!$D2,products!$A$1:$A$49,0), MATCH(orders!I$1,products!$A$1:$G$1,0)) |
| 3 | E-M-0.5 | 5 | =INDEX(products!$A$1:$G$49,MATCH(orders!$D3,products!$A$1:$A$49,0), MATCH(orders!I$1,products!$A$1:$G$1,0)) |
| 4 | A-L-1 | 1 | =INDEX(products!$A$1:$G$49,MATCH(orders!$D4,products!$A$1:$A$49,0), MATCH(orders!I$1,products!$A$1:$G$1,0)) |
| 5 | E-M-1 | 2 | =INDEX(products!$A$1:$G$49,MATCH(orders!$D5,products!$A$1:$A$49,0), MATCH(orders!I$1,products!$A$1:$G$1,0)) |
| 6 | R-L-2.5 | 2 | =INDEX(products!$A$1:$G$49,MATCH(orders!$D6,products!$A$1:$A$49,0), MATCH(orders!I$1,products!$A$1:$G$1,0)) |
| 7 | L-D-1 | 3 | =INDEX(products!$A$1:$G$49,MATCH(orders!$D7,products!$A$1:$A$49,0), MATCH(orders!I$1,products!$A$1:$G$1,0)) |
| 8 | E-D-0.5 | 3 | =INDEX(products!$A$1:$G$49,MATCH(orders!$D8,products!$A$1:$A$49,0), MATCH(orders!I$1,products!$A$1:$G$1,0)) |
| 9 | L-L-0.2 | 1 | =INDEX(products!$A$1:$G$49,MATCH(orders!$D9,products!$A$1:$A$49,0), MATCH(orders!I$1,products!$A$1:$G$1,0)) |

**Cell J2:** `=INDEX(products!$A$1:$G$49,MATCH(orders!$D2,products!$A$1:$A$49,0), MATCH(orders!J$1,products!$A$1:$G$1,0))`

| | D | E | J |
|---|---|---|---|
| 1 | Product ID | Quantity | Roast Type |
| 2 | R-M-1 | 2 | =INDEX(products!$A$1:$G$49,MATCH(orders!$D2,products!$A$1:$A$49,0), MATCH(orders!J$1,products!$A$1:$G$1,0)) |
| 3 | E-M-0.5 | 5 | =INDEX(products!$A$1:$G$49,MATCH(orders!$D3,products!$A$1:$A$49,0), MATCH(orders!J$1,products!$A$1:$G$1,0)) |
| 4 | A-L-1 | 1 | =INDEX(products!$A$1:$G$49,MATCH(orders!$D4,products!$A$1:$A$49,0), MATCH(orders!J$1,products!$A$1:$G$1,0)) |
| 5 | E-M-1 | 2 | =INDEX(products!$A$1:$G$49,MATCH(orders!$D5,products!$A$1:$A$49,0), MATCH(orders!J$1,products!$A$1:$G$1,0)) |
| 6 | R-L-2.5 | 2 | =INDEX(products!$A$1:$G$49,MATCH(orders!$D6,products!$A$1:$A$49,0), MATCH(orders!J$1,products!$A$1:$G$1,0)) |
| 7 | L-D-1 | 3 | =INDEX(products!$A$1:$G$49,MATCH(orders!$D7,products!$A$1:$A$49,0), MATCH(orders!J$1,products!$A$1:$G$1,0)) |
| 8 | E-D-0.5 | 3 | =INDEX(products!$A$1:$G$49,MATCH(orders!$D8,products!$A$1:$A$49,0), MATCH(orders!J$1,products!$A$1:$G$1,0)) |
| 9 | L-L-0.2 | 1 | =INDEX(products!$A$1:$G$49,MATCH(orders!$D9,products!$A$1:$A$49,0), MATCH(orders!J$1,products!$A$1:$G$1,0)) |

**Cell K2:** `=INDEX(products!$A$1:$G$49,MATCH(orders!$D2,products!$A$1:$A$49,0), MATCH(orders!K$1,products!$A$1:$G$1,0))`

| | D | E | K |
|---|---|---|---|
| 1 | Product ID | Quantity | Size |
| 2 | R-M-1 | 2 | =INDEX(products!$A$1:$G$49,MATCH(orders!$D2,products!$A$1:$A$49,0), MATCH(orders!K$1,products!$A$1:$G$1,0)) |
| 3 | E-M-0.5 | 5 | =INDEX(products!$A$1:$G$49,MATCH(orders!$D3,products!$A$1:$A$49,0), MATCH(orders!K$1,products!$A$1:$G$1,0)) |
| 4 | A-L-1 | 1 | =INDEX(products!$A$1:$G$49,MATCH(orders!$D4,products!$A$1:$A$49,0), MATCH(orders!K$1,products!$A$1:$G$1,0)) |
| 5 | E-M-1 | 2 | =INDEX(products!$A$1:$G$49,MATCH(orders!$D5,products!$A$1:$A$49,0), MATCH(orders!K$1,products!$A$1:$G$1,0)) |
| 6 | R-L-2.5 | 2 | =INDEX(products!$A$1:$G$49,MATCH(orders!$D6,products!$A$1:$A$49,0), MATCH(orders!K$1,products!$A$1:$G$1,0)) |
| 7 | L-D-1 | 3 | =INDEX(products!$A$1:$G$49,MATCH(orders!$D7,products!$A$1:$A$49,0), MATCH(orders!K$1,products!$A$1:$G$1,0)) |
| 8 | E-D-0.5 | 3 | =INDEX(products!$A$1:$G$49,MATCH(orders!$D8,products!$A$1:$A$49,0), MATCH(orders!K$1,products!$A$1:$G$1,0)) |
| 9 | L-L-0.2 | 1 | =INDEX(products!$A$1:$G$49,MATCH(orders!$D9,products!$A$1:$A$49,0), MATCH(orders!K$1,products!$A$1:$G$1,0)) |

**Cell L2:** `=INDEX(products!$A$1:$G$49,MATCH(orders!$D2,products!$A$1:$A$49,0), MATCH(orders!L$1,products!$A$1:$G$1,0))`

| | D | E | L |
|---|---|---|---|
| 1 | Product ID | Quantity | Unit Price |
| 2 | R-M-1 | 2 | =INDEX(products!$A$1:$G$49,MATCH(orders!$D2,products!$A$1:$A$49,0), MATCH(orders!L$1,products!$A$1:$G$1,0)) |
| 3 | E-M-0.5 | 5 | =INDEX(products!$A$1:$G$49,MATCH(orders!$D3,products!$A$1:$A$49,0), MATCH(orders!L$1,products!$A$1:$G$1,0)) |
| 4 | A-L-1 | 1 | =INDEX(products!$A$1:$G$49,MATCH(orders!$D4,products!$A$1:$A$49,0), MATCH(orders!L$1,products!$A$1:$G$1,0)) |
| 5 | E-M-1 | 2 | =INDEX(products!$A$1:$G$49,MATCH(orders!$D5,products!$A$1:$A$49,0), MATCH(orders!L$1,products!$A$1:$G$1,0)) |
| 6 | R-L-2.5 | 2 | =INDEX(products!$A$1:$G$49,MATCH(orders!$D6,products!$A$1:$A$49,0), MATCH(orders!L$1,products!$A$1:$G$1,0)) |
| 7 | L-D-1 | 3 | =INDEX(products!$A$1:$G$49,MATCH(orders!$D7,products!$A$1:$A$49,0), MATCH(orders!L$1,products!$A$1:$G$1,0)) |
| 8 | E-D-0.5 | 3 | =INDEX(products!$A$1:$G$49,MATCH(orders!$D8,products!$A$1:$A$49,0), MATCH(orders!L$1,products!$A$1:$G$1,0)) |
| 9 | L-L-0.2 | 1 | =INDEX(products!$A$1:$G$49,MATCH(orders!$D9,products!$A$1:$A$49,0), MATCH(orders!L$1,products!$A$1:$G$1,0)) |

**Cell D1:** `Product ID`

| | D | E | I | J | K | L | M | N |
|---|---|---|---|---|---|---|---|---|
| 1 | Product ID | Quantity | Coffee Type | Roast Type | Size | Unit Price | Sales | |
| 2 | R-M-1 | 2 | Rob | M | 1 | 9.95 | | |
| 3 | E-M-0.5 | 5 | Exc | M | 0.5 | 8.25 | | |
| 4 | A-L-1 | 1 | Ara | L | 1 | 12.95 | | |
| 5 | E-M-1 | 2 | Exc | M | 1 | 13.75 | | |
| 6 | R-L-2.5 | 2 | Rob | L | 2.5 | 27.485 | | |
| 7 | L-D-1 | 3 | Lib | D | 1 | 12.95 | | |
| 8 | E-D-0.5 | 3 | Exc | D | 0.5 | 7.29 | | |
| 9 | L-L-0.2 | 1 | Lib | L | 0.2 | 4.755 | | |
| 10 | R-M-0.5 | 3 | Rob | M | 0.5 | 5.97 | | |
| 11 | R-M-0.5 | 1 | Rob | M | 0.5 | 5.97 | | |

3. For the Sales column all I did was to multiply the Quantity (E) by the Unit Price (L) and auto-populate the data for the rest of the rows in column M:

| SUM | ⋮ ✕ ✓ *fx* | =L2*E2 |

| | D | E | L | M |
|---|---|---|---|---|
| 1 | Product ID | Quantity | Unit Price | |
| 2 | R-M-1 | 2 | 9.95 | =L2*E2 |
| 3 | E-M-0.5 | 5 | 8.25 | 41.3 |
| 4 | A-L-1 | 1 | 12.95 | 13 |
| 5 | E-M-1 | 2 | 13.75 | 27.5 |
| 6 | R-L-2.5 | 2 | 27.485 | 55 |
| 7 | L-D-1 | 3 | 12.95 | 38.9 |
| 8 | E-D-0.5 | 3 | 7.29 | 21.9 |
| 9 | L-L-0.2 | 1 | 4.755 | 4.76 |
| 10 | R-M-0.5 | 3 | 5.97 | 17.9 |
| 11 | R-M-0.5 | 1 | 5.97 | 5.07 |

4. Next was formatting cells for coffee size (K), Unit Price (L) and Sales (M) using kilograms and dollar units:

Format Cells

Number  Alignment  Font  Border  Fill  Protection

Category:
General
Number
Currency
Accounting
Date
Time
Percentage
Fraction
Scientific
Text
Special
Custom

Sample
Size

Type:
0.0 "Kg"

General
0
0.00
#,##0
#,##0.00
#,##0_);(#,##0)
#,##0_);[Red](#,##0)
#,##0.00_);(#,##0.00)
#,##0.00_);[Red](#,##0.00)
$#,##0_);($#,##0)
$#,##0_);[Red]($#,##0)
$#,##0.00_);($#,##0.00)

Delete

Type the number format code, using one of the existing codes as a starting point.

OK    Cancel

Format Cells

Number  Alignment  Font  Border  Fill  Protection

Category:
General
Number
Currency
Accounting
Date
Time
Percentage
Fraction
Scientific
Text
Special
Custom

Sample
$9.95

Decimal places: 2

Symbol: $

Accounting formats line up the currency symbols and decimal points in a column.

OK    Cancel

| K | L | M |
|---|---|---|
| Size | Unit Price | Sales |
| 1.0 Kg | $ 9.95 | $ 19.90 |
| 0.5 Kg | $ 8.25 | $ 41.25 |
| 1.0 Kg | $ 12.95 | $ 12.95 |
| 1.0 Kg | $ 13.75 | $ 27.50 |
| 2.5 Kg | $ 27.49 | $ 54.97 |
| 1.0 Kg | $ 12.95 | $ 38.85 |
| 0.5 Kg | $ 7.29 | $ 21.87 |
| 0.2 Kg | $ 4.76 | $ 4.76 |
| 0.5 Kg | $ 5.97 | $ 17.91 |
| 0.5 Kg | $ 5.97 | $ 5.97 |
| 1.0 Kg | $ 9.95 | $ 39.80 |
| 2.5 Kg | $ 34.16 | $ 170.78 |
| 1.0 Kg | $ 9.95 | $ 49.75 |
| 2.5 Kg | $ 20.59 | $ 41.17 |

5. Next, I created new fields in column N and O to populate complete name information from the Coffee Type (I) and Roast Type (J) records.
To populate this data, I used the IF function to identify values ('Rob,' 'Exc,' 'Ara,' or 'Lib' for the Coffee Type column/'M', 'L' or 'D' for the Roast Type column) and if these held true, then the complete corresponding name would be addressed:

| Save | Undo | Redo | AutoSave ⬤ Off | ◎ MoveSpecific | ← MovePrevious | → MoveNext | ▼ |

N2  =IF(I2="Rob","Robusta",IF(I2="Exc","Excelsa",IF(I2="Ara","Arabica",IF(I2="Lib","Liberica",""))))

| | I | N |
|---|---|---|
| 1 | Coffee Type | Coffee Type Name |
| 2 | Rob | =IF(I2="Rob","Robusta",IF(I2="Exc","Excelsa",IF(I2="Ara","Arabica",IF(I2="Lib","Liberica","")))) |
| 3 | Exc | =IF(I3="Rob","Robusta",IF(I3="Exc","Excelsa",IF(I3="Ara","Arabica",IF(I3="Lib","Liberica","")))) |
| 4 | Ara | =IF(I4="Rob","Robusta",IF(I4="Exc","Excelsa",IF(I4="Ara","Arabica",IF(I4="Lib","Liberica","")))) |
| 5 | Exc | =IF(I5="Rob","Robusta",IF(I5="Exc","Excelsa",IF(I5="Ara","Arabica",IF(I5="Lib","Liberica","")))) |
| 6 | Rob | =IF(I6="Rob","Robusta",IF(I6="Exc","Excelsa",IF(I6="Ara","Arabica",IF(I6="Lib","Liberica","")))) |
| 7 | Lib | =IF(I7="Rob","Robusta",IF(I7="Exc","Excelsa",IF(I7="Ara","Arabica",IF(I7="Lib","Liberica","")))) |
| 8 | Exc | =IF(I8="Rob","Robusta",IF(I8="Exc","Excelsa",IF(I8="Ara","Arabica",IF(I8="Lib","Liberica","")))) |
| 9 | Lib | =IF(I9="Rob","Robusta",IF(I9="Exc","Excelsa",IF(I9="Ara","Arabica",IF(I9="Lib","Liberica","")))) |

O2  =IF(J2="M","Medium",IF(J2="L","Light",IF(J2="D","Dark","")))

| | J | O |
|---|---|---|
| 1 | Roast Type | Roast Type Name |
| 2 | M | =IF(J2="M","Medium",IF(J2="L","Light",IF(J2="D","Dark",""))) |
| 3 | M | =IF(J3="M","Medium",IF(J3="L","Light",IF(J3="D","Dark",""))) |
| 4 | L | =IF(J4="M","Medium",IF(J4="L","Light",IF(J4="D","Dark",""))) |
| 5 | M | =IF(J5="M","Medium",IF(J5="L","Light",IF(J5="D","Dark",""))) |
| 6 | L | =IF(J6="M","Medium",IF(J6="L","Light",IF(J6="D","Dark",""))) |
| 7 | D | =IF(J7="M","Medium",IF(J7="L","Light",IF(J7="D","Dark",""))) |
| 8 | D | =IF(J8="M","Medium",IF(J8="L","Light",IF(J8="D","Dark",""))) |
| 9 | L | =IF(J9="M","Medium",IF(J9="L","Light",IF(J9="D","Dark",""))) |

P1

| | I | J | K | L | M | N | O |
|---|---|---|---|---|---|---|---|
| 1 | Coffee Type | Roast Type | Size | Unit Price | Sales | Coffee Type Name | Roast Type Name |
| 2 | Rob | M | 1.0 Kg | $ 9.95 | $ 19.90 | Robusta | Medium |
| 3 | Exc | M | 0.5 Kg | $ 8.25 | $ 41.25 | Excelsa | Medium |
| 4 | Ara | L | 1.0 Kg | $ 12.95 | $ 12.95 | Arabica | Light |
| 5 | Exc | M | 1.0 Kg | $ 13.75 | $ 27.50 | Excelsa | Medium |
| 6 | Rob | L | 2.5 Kg | $ 27.49 | $ 54.97 | Robusta | Light |
| 7 | Lib | D | 1.0 Kg | $ 12.95 | $ 38.85 | Liberica | Dark |
| 8 | Exc | D | 0.5 Kg | $ 7.29 | $ 21.87 | Excelsa | Dark |
| 9 | Lib | L | 0.2 Kg | $ 4.76 | $ 4.76 | Liberica | Light |
| 10 | Rob | M | 0.5 Kg | $ 5.97 | $ 17.91 | Robusta | Medium |
| 11 | Rob | M | 0.5 Kg | $ 5.97 | $ 5.97 | Robusta | Medium |
| 12 | Ara | D | 1.0 Kg | $ 9.95 | $ 39.80 | Arabica | Dark |
| 13 | Exc | L | 2.5 Kg | $ 34.16 | $170.78 | Excelsa | Light |
| 14 | Rob | M | 1.0 Kg | $ 9.95 | $ 49.75 | Robusta | Medium |
| 15 | Rob | D | 2.5 Kg | $ 20.59 | $ 41.17 | Robusta | Dark |

6. Next, I formatted the Orders dataset as a table of my choice to sort and filter data, as well as for frequent records to be updated in pivot tables and charts in the future. In this project I named my table 'OrdersTable'.

| Order ID | Order Date | Customer ID | Product ID | Quantity | Customer Name | Email | Country | Coffee Type | Roast Type | Size | Unit Price | Sales | Coffee Type Name | Roast Type Name |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| QEV-37451-860 | 9/5/2019 | 17670-51384-MA | R-M-1 | 2 | Aloisia Allner | aallner0@lulu.com | United States | Rob | M | 1.0 Kg | $ 9.95 | $ 19.90 | Robusta | Medium |
| QEV-37451-860 | 9/5/2019 | 17670-51384-MA | E-M-0.5 | 5 | Aloisia Allner | aallner0@lulu.com | United States | Exc | M | 0.5 Kg | $ 8.25 | $ 41.25 | Excelsa | Medium |
| FAA-43335-268 | 6/17/2021 | 21125-22134-PX | A-L-1 | 1 | Jami Redholes | jredholes2@tmall.com | United States | Ara | L | 1.0 Kg | $ 12.95 | $ 12.95 | Arabica | Light |
| KAC-83089-793 | 7/15/2021 | 23806-46781-OU | E-M-1 | 2 | Christoffer O' Shea | | Ireland | Exc | M | 1.0 Kg | $ 13.75 | $ 27.50 | Excelsa | Medium |
| KAC-83089-793 | 7/15/2021 | 23806-46781-OU | R-L-2.5 | 2 | Christoffer O' Shea | | Ireland | Rob | L | 2.5 Kg | $ 27.49 | $ 54.97 | Robusta | Light |
| CVP-18956-553 | 8/4/2021 | 86561-91660-RB | L-D-1 | 3 | Beryle Cottier | | United States | Lib | D | 1.0 Kg | $ 12.95 | $ 38.85 | Liberica | Dark |
| IPP-31994-879 | 1/21/2022 | 65223-29612-CB | E-D-0.5 | 3 | Shaylynn Lobe | slobe6@nifty.com | United States | Exc | D | 0.5 Kg | $ 7.29 | $ 21.87 | Excelsa | Dark |
| SNZ-65340-705 | 5/20/2022 | 21134-81676-FR | L-L-0.2 | 1 | Melvin Wharfe | | Ireland | Lib | L | 0.2 Kg | $ 4.76 | $ 4.76 | Liberica | Light |
| EZT-46571-659 | 1/2/2019 | 03396-68805-ZC | R-M-0.5 | 3 | Guthrey Petracci | gpetracci8@livejournal.com | United States | Rob | M | 0.5 Kg | $ 5.97 | $ 17.91 | Robusta | Medium |
| NWQ-70061-912 | 9/5/2019 | 61021-27840-ZN | R-M-0.5 | 1 | Rodger Raven | rraven9@ed.gov | United States | Rob | M | 0.5 Kg | $ 5.97 | $ 5.97 | Robusta | Medium |
| BKK-47233-845 | 3/8/2021 | 76239-90137-UQ | A-D-1 | 4 | Ferrell Ferber | fferbera@businesswire.com | United States | Ara | D | 1.0 Kg | $ 9.95 | $ 39.80 | Arabica | Dark |
| VQR-01002-970 | 10/28/2020 | 49315-21985-BB | E-L-2.5 | 5 | Duky Phizackerly | dphizackerlyb@utexas.edu | United States | Exc | L | 2.5 Kg | $ 34.16 | $170.78 | Excelsa | Light |
| SZW-48378-399 | 7/2/2022 | 34136-36674-OM | R-M-1 | 5 | Rosaleen Scholar | rscholarc@nyu.edu | United States | Rob | M | 1.0 Kg | $ 9.95 | $ 49.75 | Robusta | Medium |
| ITA-87418-783 | 5/22/2020 | 39396-12890-PE | R-D-2.5 | 2 | Terence Vanyutin | tvanyutind@wix.com | United States | Rob | D | 2.5 Kg | $ 20.59 | $ 41.17 | Robusta | Dark |
| GNZ-46006-527 | 4/5/2022 | 95875-73336-RG | L-D-0.2 | 3 | Patrice Trobe | ptrobee@wunderground.com | United States | Lib | D | 0.2 Kg | $ 3.89 | $ 11.66 | Liberica | Dark |
| FYQ-78248-319 | 6/7/2022 | 25473-43727-BY | R-M-2.5 | 5 | Llywellyn Oscroft | loscroftf@ebay.co.uk | United States | Rob | M | 2.5 Kg | $ 22.89 | $114.43 | Robusta | Medium |
| VAU-44387-624 | 3/20/2019 | 99643-51048-IQ | A-M-0.2 | 6 | Minni Alabaster | malabasterg@hexun.com | United States | Ara | M | 0.2 Kg | $ 3.38 | $ 20.25 | Arabica | Medium |
| RDW-33155-159 | 10/19/2019 | 62173-15287-CU | A-L-1 | 6 | Rhianon Broxup | rbroxuph@jimdo.com | United States | Ara | L | 1.0 Kg | $ 12.95 | $ 77.70 | Arabica | Light |
| TDZ-59011-211 | 6/13/2019 | 57611-05522-ST | R-D-2.5 | 4 | Pall Redford | predfordi@ow.ly | Ireland | Rob | D | 2.5 Kg | $ 20.59 | $ 82.34 | Robusta | Dark |
| IDU-25793-399 | 12/4/2020 | 76664-37050-DT | A-M-0.2 | 5 | Aurea Corradino | acorradinoj@harvard.edu | United States | Ara | M | 0.2 Kg | $ 3.38 | $ 16.88 | Arabica | Medium |
| IDU-25793-399 | 12/4/2020 | 76664-37050-DT | E-D-0.2 | 4 | Aurea Corradino | acorradinoj@harvard.edu | United States | Exc | D | 0.2 Kg | $ 3.65 | $ 14.58 | Excelsa | Dark |
| NUO-20013-488 | 12/4/2020 | 03090-88267-BQ | A-D-0.2 | 6 | Avrit Davidowsky | adavidowskyl@netvibes.com | United States | Ara | D | 0.2 Kg | $ 2.99 | $ 17.91 | Arabica | Dark |
| UQU-65630-479 | 1/22/2021 | 37651-47492-NC | R-M-2.5 | 4 | Annabel Antuk | aantukm@kickstarter.com | United States | Rob | M | 2.5 Kg | $ 22.89 | $ 91.54 | Robusta | Medium |
| FEO-11834-332 | 2/11/2022 | 95399-57205-HI | A-D-0.2 | 4 | Iorgo Kleinert | ikleinertn@timesonline.co.uk | United States | Ara | D | 0.2 Kg | $ 2.99 | $ 11.94 | Arabica | Dark |
| TKY-71558-096 | 11/4/2021 | 24010-66714-HW | A-M-1 | 1 | Chrisy Blofeld | cblofeldo@amazon.co.uk | United States | Ara | M | 1.0 Kg | $ 11.25 | $ 11.25 | Arabica | Medium |
| OXY-65322-253 | 10/24/2020 | 07591-92789-UA | E-M-0.2 | 3 | Culley Farris | | United States | Exc | M | 0.2 Kg | $ 4.13 | $ 12.38 | Excelsa | Medium |
| EVP-43500-491 | 2/20/2019 | 49231-44455-IC | A-M-0.5 | 4 | Selene Shales | sshalesq@umich.edu | United States | Ara | M | 0.5 Kg | $ 6.75 | $ 27.00 | Arabica | Medium |
| WAG-26945-689 | 10/8/2019 | 50124-88608-EO | A-M-0.2 | 5 | Vivie Danneil | vdanneilr@mtv.com | Ireland | Ara | M | 0.2 Kg | $ 3.38 | $ 16.88 | Arabica | Medium |
| CHE-78995-767 | 8/2/2022 | 00888-74814-UZ | A-D-0.5 | 3 | Theresita Newbury | tnewburys@usda.gov | Ireland | Ara | D | 0.5 Kg | $ 5.97 | $ 17.91 | Arabica | Dark |
| RYZ-14633-602 | 2/20/2019 | 14158-30713-OB | A-D-1 | 4 | Mozelle Calcutt | mcalcuttt@baidu.com | Ireland | Ara | D | 1.0 Kg | $ 9.95 | $ 39.80 | Arabica | Dark |
| WOQ-36015-429 | 9/25/2021 | 51427-89175-QJ | L-M-0.2 | 5 | Adrian Swaine | | United States | Lib | M | 0.2 Kg | $ 4.37 | $ 21.83 | Liberica | Medium |

orders  customers  products

7. The next part of this project was to insert pivot tables and charts from the Orders tab on different worksheets. First, I inserted a pivot table in a new worksheet as show below:
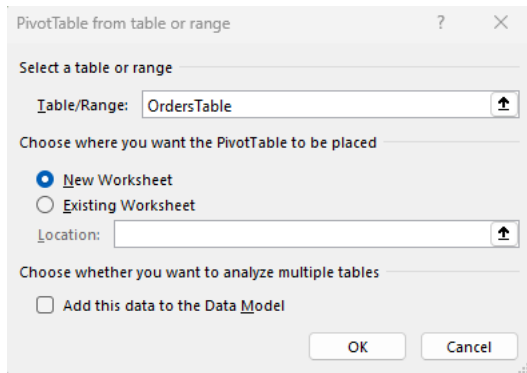


8. Next, in the Design tab I adjusted the Grand Totals and Report layouts to show in tabular form:
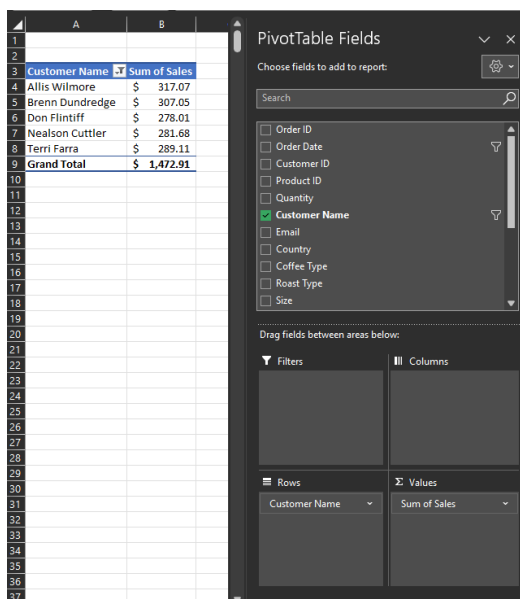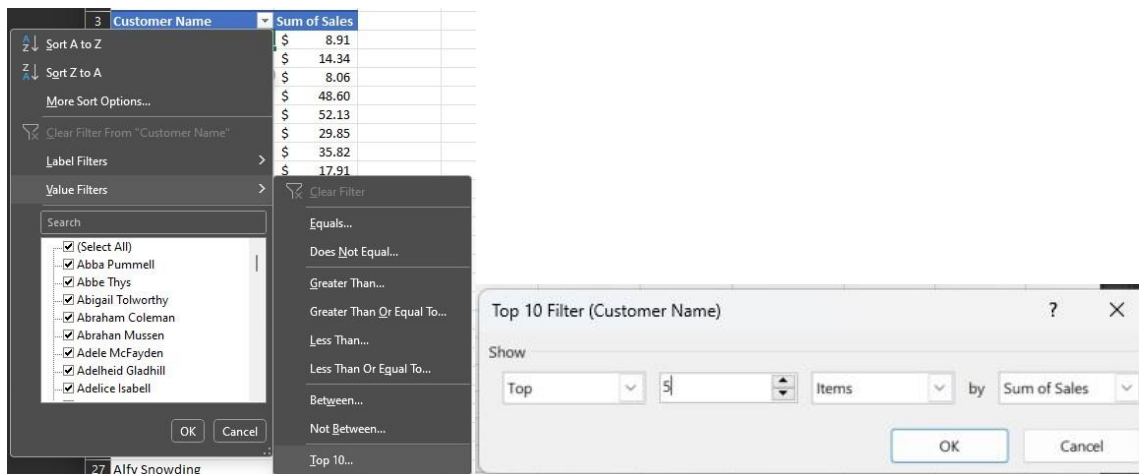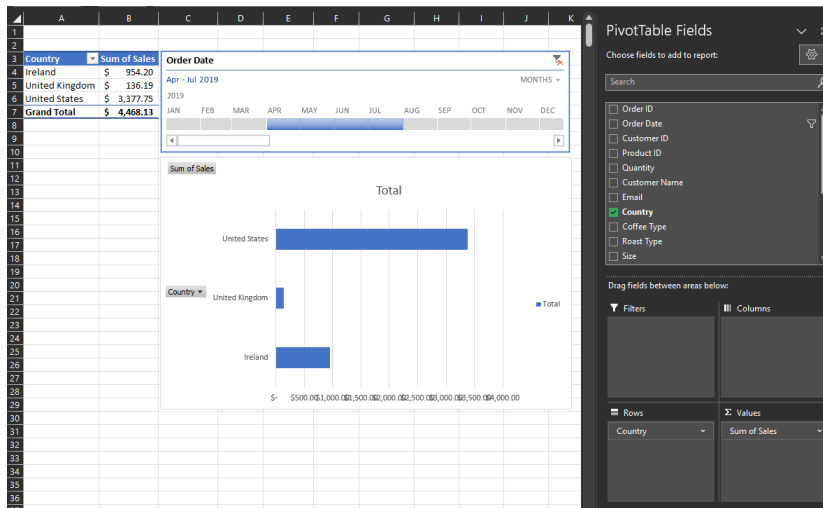
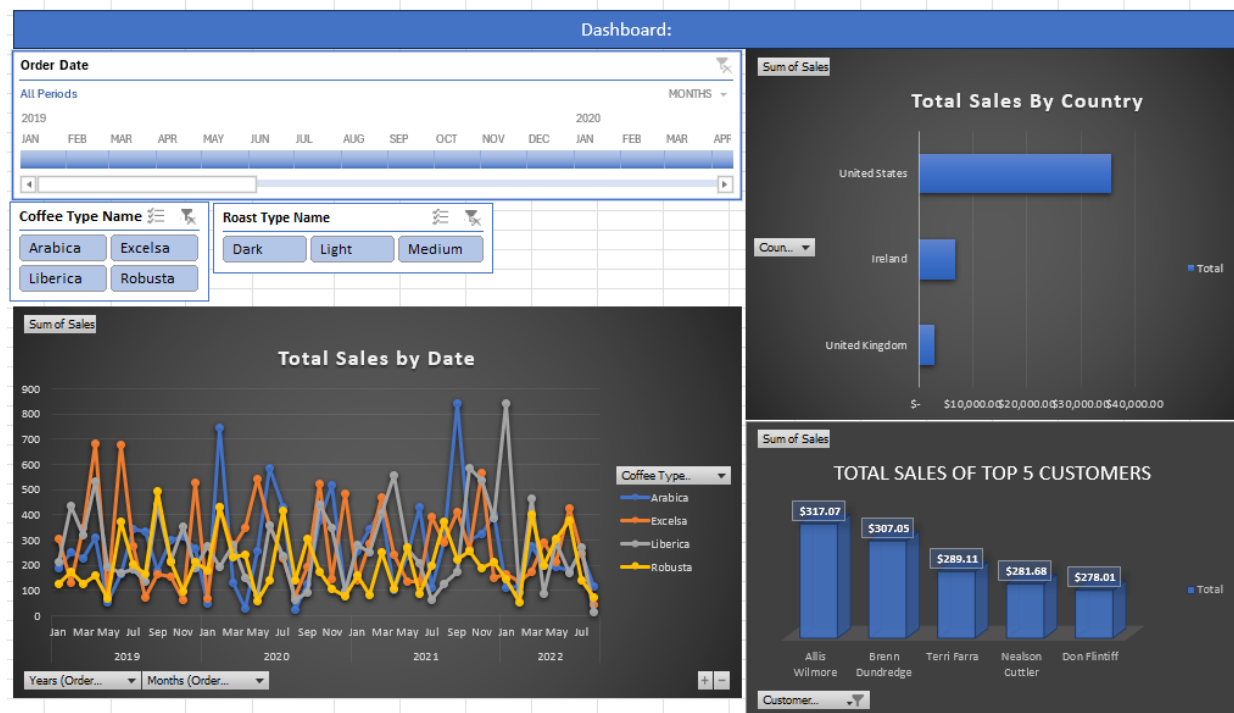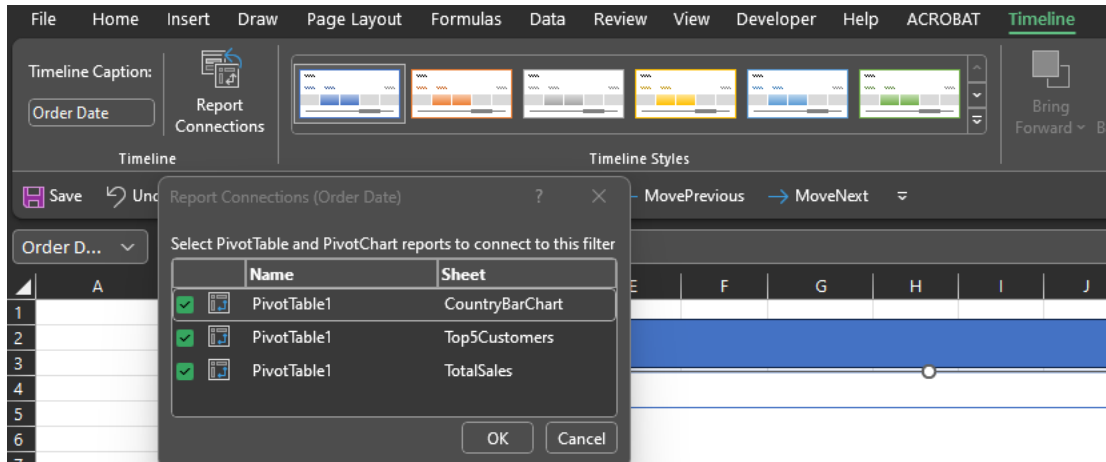9. Next, I inserted a line chart to reflect the total sales data from the pivot table:
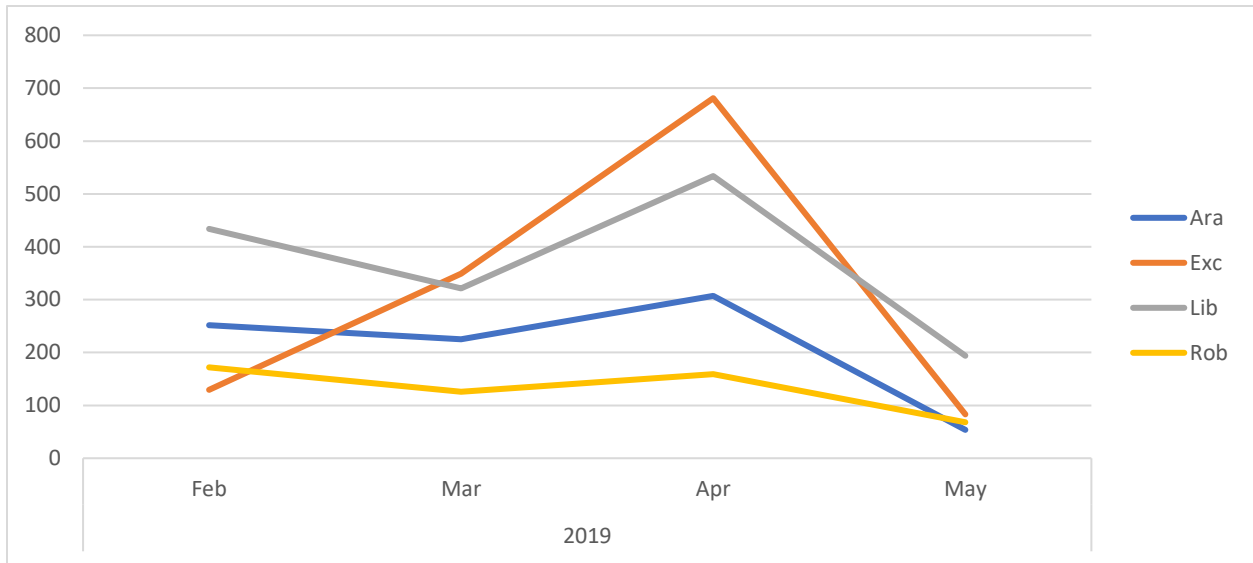


10. Since this chart involved dates, I inserted a Timeline to filter the chart as necessary:
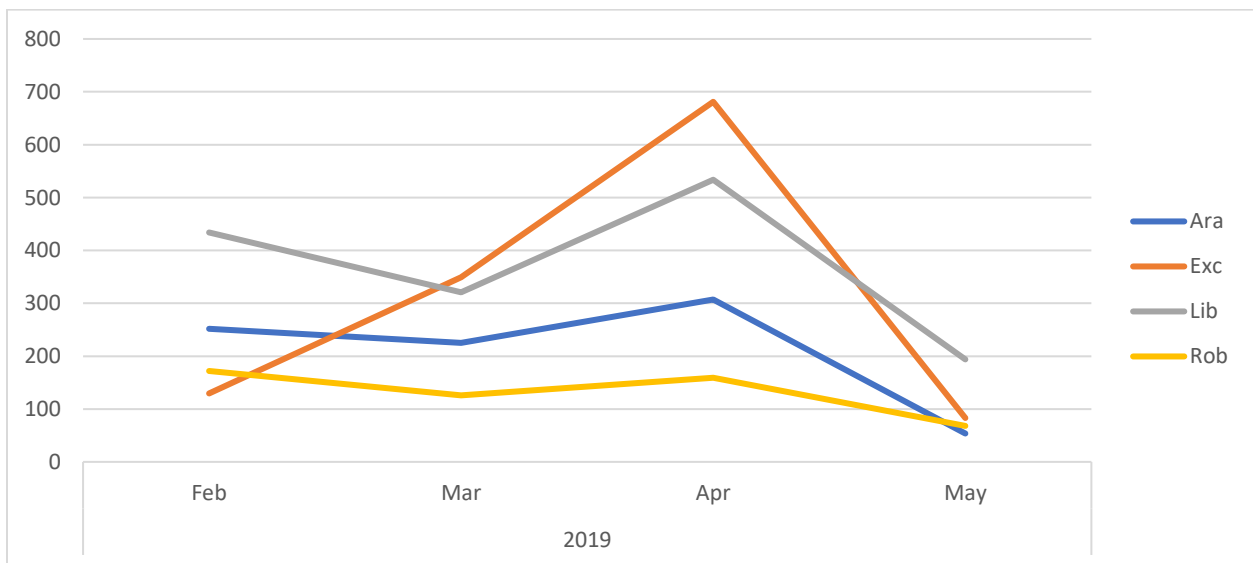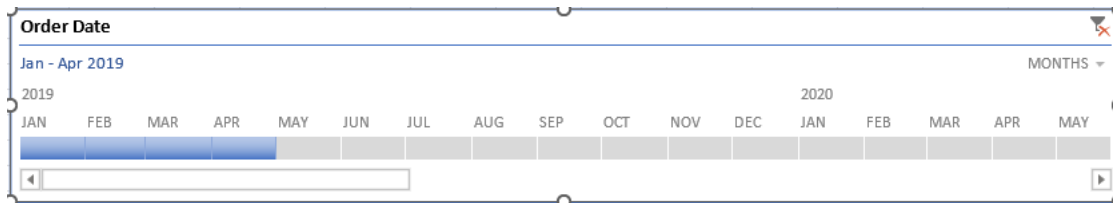
11. Other worksheets I have worked on to summarize large data was to present clustered bar charts and 3-D clustered column charts for each country and the top 5 customers:

12. As the final step of this project, I cut the charts and the timeline into a new worksheet to create an interactive dashboard. For the timeline filter to work in all charts, I selected the pivot tables to connect with the timeline. Similarly, I created slicers for the coffee and roast type and reported the connections necessary for my dashboard. I also ETL a dashboard in Power BI to verify my results:

References:

- https://www.youtube.com/watch?v=m13o5aqeCbM
- https://github.com/mochen862/excel-project-coffee-sales