Data Analysis & Business Intelligence Made Easy with Excel Power Tools Excel Data Analysis Basics = E-DAB Notes for Video:

E-DAB-03: Summary Reports with Excel Spreadsheet Formulas

Objectives of Video:

| 1. | Excel Spreadsheet Formulas Uses in Data Analysis | 2 |
|-----|---|----|
| 2. | Change Default Settings for Table Formula Nomenclature (Structured References) | |
| 3. | Cell References in Formulas | 4 |
| 4. | Excel Functions to Make Calculations Based on one Condition, four examples: | 4 |
| 5. | SUMIFS Function with One Condition shown on next page in cell H13 | 4 |
| 6. | SUMIFS Function with One Condition & Dynamic Array shown on next page in cell K13 | 4 |
| 7. | COUNTIFS Function with One Condition shown on next page in cell H24 | 4 |
| 8. | COUNTIFS Function with One Condition & Dynamic Array shown on next page in cell K24 | 4 |
| 9. | Excel Functions to Make Calculations Based on an AND Logical Text. | 6 |
| 10. | SUMIFS for Summary Report Based on Adding, Old School Cell References and Dynamic Arrays | 7 |
| 11. | COUNTIFS for Summary Report Based on Counting, Old School Cell References and Dynamic Arrays | 7 |
| 12. | AVERAGEIFS for Summary Report Based on Averaging, Old School Cell References and Dynamic Arrays | 7 |
| 13. | Screen Shots of Old School Formulas with Totals on Worksheet Named "Old School with Totals" | 8 |
| 14. | Office 365 Dynamic Array Notes from Worksheet named "O365 Dynamic Arrays" | 10 |

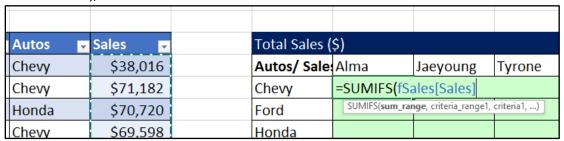
1. <u>Excel Spreadsheet Formulas Uses in Data Analysis</u>

| _ A | В | С | D | E | F G | Н | I | J | K | L | M |
|-----|---------------|--------------|---------------|---------------|----------------------|----------------|----------------|---------------|--------------------|--------|----------------------------|
| | | | | | | | | | | | |
| | Objective | e #1: Exc | el Sprea | adsheet I | Formulas Uses | in Data A | nalysis | | | | |
| | | | | | | | | | | | |
| | Excel Spreads | sheet Formu | las are the | only feature | in Excel that update | instantly when | source data | changes. | | | |
| | When you wa | ant a Data A | nalysis Exce | l Solution to | respond instantly to | changes in the | e source data, | use formulas | | | |
| | Other Data A | nalysis Exce | l Solution su | uch as PivotT | ables and Power Que | ery respond to | changes in th | e source data | only after usi | ng the | refresh commar |
| | | | | | | | | | | ¬ г | |
| | Date 🔻 | Sales Rep | Autos 🔽 | Sales 🔽 | Total Sales (\$) | | | | | | Reports built |
| | 2/11/2019 | Alma | Chevy | \$38,016 | Autos/ Sales Rep | Alma | Jaeyoung | Tyrone | Total | | with Excel |
| | 2/11/2019 | Tyrone | Chevy | \$71,182 | Chevy | 107,614 | 57,034 | 71,182 | 235,830 | | Spreadsheet Formulas |
| | 2/11/2019 | Jaeyoung | Honda | \$70,720 | Ford | 37,432 | 63,092 | 98,481 | 199,005 | Н | update instantl |
| 2 | 2/11/2019 | Alma | Chevy | \$69,598 | Honda | 33,415 | 70,720 | 213,010 | 317,145 | | when source |
| 3 | 2/11/2019 | - | Honda | \$55,299 | Toyota | 47,352 | 95,940 | 0 | 143,292 | | data changes. |
| 1 | 2/11/2019 | Jaeyoung | Toyota | \$63,882 | Total | 225,813 | 286,786 | 382,673 | 895,272 | | Ü |
| | 2/12/2019 | | Toyota | \$47,352 | | | | | | י ע | |
| 5 | 2/12/2019 | • | Ford | \$53,105 | | | | | | — г | |
| _ | 2/12/2019 | | Toyota | \$32,058 | Sum of Sales (\$) | Sales Rep 🔻 | | | | | Reports built |
| 3 | 2/12/2019 | | Honda | \$33,415 | | Alma | Jaeyoung | Tyrone | Grand Total | | with Excel |
|) | 2/12/2019 | - | Honda | \$71,880 | Chevy | 107,614 | 57,034 | 71,182 | 235,830 | | PivotTables require you to |
|) | 2/13/2019 | | Ford | \$63,092 | Ford | 37,432 | | 98,481 | 199,005 | | refresh the |
| | 2/13/2019 | | Ford | \$37,432 | Honda | 33,415 | 70,720 | 213,010 | 317,145 | | Report when |
| | 2/13/2019 | - | Ford | \$45,376 | Toyota | 47,352 | 95,940 | | 143,292 | | source data |
| 3 | 2/13/2019 | - | Chevy | \$57,034 | Grand Total | 225,813 | 286,786 | 382,673 | 895,272 | | changes. |
| 1 | 2/13/2019 | • | Honda | \$45,881 | | | | | | ا ر | |
| | 2/13/2019 | Tyrone | Honda | \$39,950 | | | | | | | |
| 5 | | | | 1 | | | | | | | |
| 7 | | | | \ | | | | | | | |
| | 1/14/2019 | | Ford | 31980 | \ | | | | | | |
| | 1/14/2019 | - | Toyota | 45789 | As seen in the | | | | | | |
| | 1/14/2019 | | Honda | 55299 | this new data is | | | | | | |
| | 1/14/2019 | | Toyota | 63882 | Excel Table, the | | | | | | |
| 2 | 1/14/2019 | | Toyota | 47352 | report will resp | ona instantiy | • | | | | |
| | 1/14/2019 | | Chevy | 29870 | | | | | | | |
| 1 | 1/14/2019 | Alma | Honda | 31852 | | | | | | | |

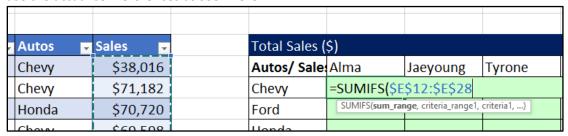
2. <u>Change Default Settings for Table Formula Nomenclature (Structured References).</u>

When we refer to a Field or Column in an Excel Table, we can choose one of two options:

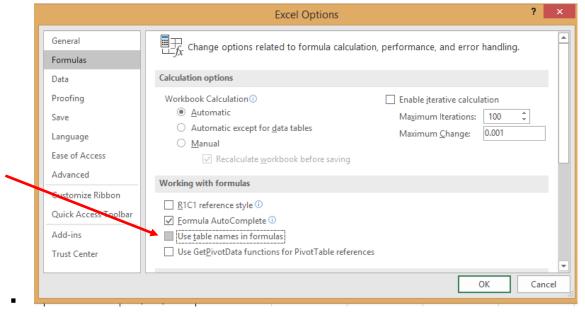
1. Table Name and then field name in square brackets, called Table Formula Nomenclature (or Structured References), as seen here:



2. We can use the actual cell references as seen here:



3. To change the default setting for referring to a File or Column in an Excel Table, Go to the File Ribbon Tab, Then to Options, then on the left click on the Formula tab, then check or uncheck the option "", as seen here:



- 3. Cell References in Formulas.
- 1) Example of Cell Reference: A1
 - i. Column reference = A
 - ii. Row reference = 1
- 2) Copying formulas with Cell References:
 - i. When we copy a formula that contains cell references, we need to consider whether we need: Relative, Absolute, Mixed with the Column Locked or Mixed with the Row Locked.
 - ii. If you will not copy the formula, there is no need to consider what type of cell reference it will be.
- 3) Four Basic Types of Cell References (Relative, Absolute, Mixed Column Locked, Mixed Row Locked):
 - i. Relative Cell References Example: A1
 - No dollar signs
 - Moves relatively throughout the copy action.
 - Relatively means that if the formula is looking at a cell reference that is three cells to the left, when you copy the formula to any other cell, the cell reference will still be looking three cells to the left.
 - ii. Absolute Cell References Example: \$A\$1
 - Dollar signs before both:
 - i. Column reference = A
 - ii. Row reference = 1
 - Absolute means that if the formula is looking at a particular cell reference, when you copy the formula to any other cell, the cell reference will still be looking at that particular cell reference. If the absolute cell reference is \$A\$1, the formula will always look at cell A1. It is as if the formula is locked on the cell A1 throughout copy action.
 - iii. Mixed Cell References with Row Locked Example: A\$1
 - Dollar sign before row reference only.
 - Remains absolute or locked when copying across the rows, vertically (up and down).
 - Moves relatively when copying across the columns, horizontally (side to side).
 - iv. Mixed Cell References with Column Locked Example: \$A1
 - Dollar sign before column reference only.
 - Remains absolute or locked when copying across the columns, horizontally (side to side).
 - Moves relatively when copying across the rows, vertically (up and down).
- 4) Keyboard to Toggle Cell References = F4 Key.
 - i. F4 key = If cursor is touching a cell reference in a formula while in edit mode, F4 toggles between the four basic types of cell references.
- 4. Excel Functions to Make Calculations Based on one Condition, four examples:
- 5. <u>SUMIFS Function with One Condition shown on next page in cell H13</u>
- 6. SUMIFS Function with One Condition & Dynamic Array shown on next page in cell K13
- 7. COUNTIFS Function with One Condition shown on next page in cell H24
- 8. COUNTIFS Function with One Condition & Dynamic Array shown on next page in cell K24

| _ A A | В | С | D | E | F | G | Н | 1 | j | K | L |
|-------|---------|-----------|--------|----------|---|------------|--------------------|------------|----------------|--------------------|----------|
| 8 | Date 🔽 | Sales Rep | Autos | Sales | | | Summary Re | eport - A | dding with | 1 Condition | |
| 9 | 2/11/19 | Alma | Chevy | \$43,000 | | | | | | | |
| 10 | 2/11/19 | Tyrone | Chevy | \$71,182 | | Spreadshe | et Formulas: | | Office 365 | Dynamic Array I | ormulas: |
| 11 | 2/11/19 | Jaeyoung | Honda | \$70,720 | | | | | | | |
| 12 | 2/11/19 | Alma | Chevy | \$69,598 | | Autos | Total Sales | | Autos | Total Sales | |
| 13 | 2/11/19 | Tyrone | Honda | \$55,299 | | Chevy | \$270,684 | | Chevy | \$270,684.00 | |
| 14 | 2/11/19 | Jaeyoung | Toyota | \$63,882 | | Ford | \$230,985 | | Ford | \$230,985.00 | |
| 15 | 2/12/19 | Alma | Toyota | \$47,352 | | Honda | \$404,296 | | Honda | \$404,296.00 | |
| 16 | 2/12/19 | Tyrone | Ford | \$53,105 | | Subaru | \$39,500 | | Subaru | \$39,500.00 | |
| 17 | 2/12/19 | Jaeyoung | Toyota | \$32,058 | | Toyota | \$300,315 | | Toyota | \$300,315.00 | |
| 18 | 2/12/19 | Alma | Honda | \$33,415 | | | | | | | |
| 19 | 2/12/19 | Tyrone | Honda | \$71,880 | | | Summary Rep | port - Co | unting with | 1 Condition | |
| 20 | 2/13/19 | Jaeyoung | Ford | \$63,092 | | | | | | | |
| 21 | 2/13/19 | Alma | Ford | \$37,432 | | Spreadshe | et Formulas: | | Office 365 | Dynamic Array I | ormulas: |
| 22 | 2/13/19 | Tyrone | Ford | \$45,376 | | | | | | | |
| 23 | 2/13/19 | Jaeyoung | Chevy | \$57,034 | | Autos | Count Sales | | Autos | Count Sales | |
| 24 | 2/13/19 | Tyrone | Honda | \$45,881 | | Chevy | 5 | | Chevy | 5 | |
| 25 | 2/13/19 | Tyrone | Honda | \$39,950 | | Ford | 5 | | Ford | 5 | |
| 26 | 1/14/19 | Tyrone | Subaru | \$39,500 | | Honda | 8 | | Honda | 8 | |
| 27 | 1/14/19 | Alma | Ford | \$31,980 | | Subaru | 1 | | Subaru | 1 | |
| 28 | 1/14/19 | Tyrone | Toyota | \$45,789 | | Toyota | 6 | | Toyota | 6 | |
| 29 | 1/14/19 | Jaeyoung | Honda | \$55,299 | | | | | | | |
| 30 | 1/14/19 | Alma | Toyota | \$63,882 | | Formula in | cell H13: =SUMIF | S(\$E\$9: | \$E\$33,\$D\$9 | :\$D\$33,G13) | |
| 31 | 1/14/19 | Tyrone | Toyota | \$47,352 | | Formula in | cell K13: =SUMIF | S(E9:E33 | 3,D9:D33,J1 | 3#) | |
| 32 | 1/14/19 | Jaeyoung | Chevy | \$29,870 | | Formula in | cell H24: =COUN | TIFS(\$D\$ | \$9:\$D\$33,G | 24) | |
| 33 | 1/14/19 | Alma | Honda | \$31,852 | | Formula in | cell K24: =COUNT | TIFS(D9: | D33,J24#) | | |

9. Excel Functions to Make Calculations Based on an AND Logical Text.

- i. Functions that can perform AND Logical Tests:
 - 1. SUMIFS: Adds numbers with one or more conditions or criteria
 - 2. COUNTIFS: Counts with one or more conditions or criteria
 - 3. AVERAGEIFS: Averages numbers with one or more conditions or criteria
 - 4. MAXIFS: Finds Maximum number with one or more conditions or criteria
 - 5. MINIFS: Finds Minimum number with one or more conditions or criteria
- ii. Each function has arguments that you must enter to make the AND Logical Test Calculation.
- iii. Examples of arguments for SUMIFS and COUNTIFS:

SUMIFS(sum_range, criteria_range1, criteria1, criteria_range2, criteria2...)

- The SUMIFS function adds with 1 or more conditions/criteria.
- **sum_range** argument will contain the range with the numbers.
- **criteria_range1** argument will contain the range with all the items being considered.
- criteria1 argument contains the specific condition or criteria that tells the function what to consider.
- You can up to 127 pairs of criteria_rangeN and criteriaN argumnets

COUNTIFS(criteria_range1, criteria1, criteria_range2, criteria2...)

- The COUNTIFS function counts with 1 or more conditions/criteria.
- **criteria_range1** argument will contain the range with all the items being considered.
- **criteria1** argument contains the condition or criteria that tells the function what to count.
- You can up to 127 pairs of criteria_rangeN and criteriaN argumnets
- iv. Examples on Next Page:

- 10. <u>SUMIFS for Summary Report Based on Adding, Old School Cell References and Dynamic Arrays.</u>
- 11. COUNTIFS for Summary Report Based on Counting, Old School Cell References and Dynamic Arrays.
- 12. AVERAGEIFS for Summary Report Based on Averaging, Old School Cell References and Dynamic Arrays.

| A | В | С | D | E | F | G | Н | 1 | J | K | L | M | N | 0 | Р |
|-----|--------------|---------------|--------------|------------------|--------------|--|---------------|----------------|---------------|----------------|-------------|-----------------------|----------------|----------------|----------|
| 4 6 | ioals: | | | | | | | | | | | | | | |
| 5 1 | We want a (| Cross Tabul | ated Report | showing Tota | Sales by A | uto and Sales Rep. | | | | | | | | | |
| 6 2 | We want a (| Cross Tabul | ated Report | showing Aver | age Sales b | y Auto and Sales Re | p. | | | | | | | | |
| 7 3 | We want a (| Cross Tabul | ated Report | showing the | Count of Tra | ansactions by Auto | and Sales Re | p. | | | | | | | |
| 8 4 | We are ente | ring data e | ach day and | we want repo | rting solut | ion to update instar | itly when we | add new sal | les data. | | | | | | |
| 9 | | | | | | | | | | | | | | | |
| 10 | Date 💌 | Sales Rep | Autos | Sales 🔻 | | Cross Tabulated Re | eport for Tot | al Sales (\$) | | | | Cross Tabulated R | eport for Tot | al Sales (\$) | |
| 11 | 2/11/19 | Alma | Chevy | \$38,016 | | Autos/ Sales Rep | Alma | Jaeyoung | Tyrone | | | Autos/ Sales Rep | Alma | Jaeyoung | Tyrone |
| 12 | 2/11/19 | Tyrone | Chevy | \$71,182 | | Chevy | 107,614 | 57,034 | 71,182 | | (| Chevy | 107,614 | 57,034 | 71,182 |
| 13 | 2/11/19 | Jaeyoung | Honda | \$70,720 | | Ford | 37,432 | 63,092 | 98,481 | | 1 | Ford | 37,432 | 63,092 | 98,481 |
| 14 | 2/11/19 | Alma | Chevy | \$69,598 | | Honda | 33,415 | 70,720 | 213,010 | | 1 | Honda | 33,415 | 70,720 | 213,010 |
| 15 | 2/11/19 | Tyrone | Honda | \$55,299 | | Toyota | 47,352 | 95,940 | 0 | | | Γογοta | 47,352 | 95,940 | 0 |
| 16 | 2/11/19 | Jaeyoung | Toyota | \$63,882 | | AV 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | 11 | | | | | | | | |
| 7 | 2/12/19 | Alma | Toyota | \$47,352 | | | | | | | | | | | |
| 8 | 2/12/19 | Tyrone | Ford | \$53,105 | | Cross Tabulated Re | eport for Ave | erage Sales (S | 5) | | | Cross Tabulated R | eport for Ave | erage Sales (S | 5) |
| 19 | 2/12/19 | Jaeyoung | Toyota | \$32,058 | | Autos/ Sales Rep | Alma | Jaeyoung | Tyrone | | | Autos/ Sales Rep | Alma | Jaeyoung | Tyrone |
| 20 | 2/12/19 | Alma | Honda | \$33,415 | | Chevy | 53,807 | 57,034 | 71,182 | | (| Chevy | 53,807 | 57,034 | 71,182 |
| 21 | 2/12/19 | Tyrone | Honda | \$71,880 | | Ford | 37,432 | 63,092 | 49,241 | | - | Ford | 37,432 | 63,092 | 49,241 |
| 22 | 2/13/19 | Jaeyoung | Ford | \$63,092 | | Honda | 33,415 | 70,720 | 53,253 | | 1 | Honda | 33,415 | 70,720 | 53,253 |
| 3 | 2/13/19 | Alma | Ford | \$37,432 | | Toyota | 47,352 | 47,970 | 0 | | 1 | Г <mark>oyot</mark> а | 47,352 | 47,970 | 0 |
| 24 | 2/13/19 | Tyrone | Ford | \$45,376 | | 54. | | | | | | | | | |
| 25 | 2/13/19 | Jaeyoung | Chevy | \$57,034 | | Cross Tabulated Re | eport for Cou | unt of Transa | ctions | | | Cross Tabulated R | eport for Cou | int of Transa | ctions |
| 26 | 2/13/19 | Tyrone | Honda | \$45,881 | | Autos/ Sales Rep | Alma | Jaeyoung | Tyrone | | , | Autos/ Sales Rep | Alma | Jaeyoung | Tyrone |
| 27 | 2/13/19 | Tyrone | Honda | \$39,950 | | Chevy | 2 | 1 | 1 | | (| Chevy | 2 | 1 | 1 |
| 28 | | | | | | Ford | 1 | 1 | 2 | | I | Ford | 1 | 1 | 2 |
| 29 | | | | | | Honda | 1 | 1 | 4 | | | Honda | 1 | 1 | 4 |
| 0 | | | | | | Toyota | 1 | 2 | 0 | | | Г <mark>oyota</mark> | 1 | 2 | 0 |
| 31 | | | | | | 2.22 | | | | | | 32600 | | | |
| 32 | Old School | Cell Refere | nce Formula | as: | | | | | New School | Dynamic Arra | y Formul | as: | | | |
| 33 | Formula in o | cell H12: =S | SUMIFS(\$E\$ | 11:\$E\$27,\$C\$ | 11:\$C\$27,F | 1\$11,\$D\$11:\$D\$27, | \$G12) | | Formula in co | ell H13: =SUN | ΛΙFS(\$E\$1 | 1:\$E\$27,\$C\$11:\$ | C\$27,H\$11,\$ | D\$11:\$D\$2 | 7,\$G13) |
| 34 | Formula in | cell H20: =II | FERROR(AVI | RAGEIFS(\$E\$1 | 1:\$E\$27,\$ | D\$11:\$D\$27,\$G20, | C\$11:\$C\$2 | 7,H\$19),0) | Formula in co | ell N20: =IFEF | RROR(AVE | RAGEIFS(E11:E27, | D11:D27,M2 | 0#,C11:C27, | N19#),0) |
| 35 | Formula in | cell H27: =0 | COUNTIFS(\$1 | D\$11:\$D\$27,\$ | G27,\$C\$11 | :\$C\$27,H\$26) | | | Formula in co | ell N27: =COU | JNTIFS(D1 | 1:D27,M27#,C11 | :C27,N26#) | | |

13. Screen Shots of Old School Formulas with Totals on Worksheet Named "Old School with Totals".

| 1 | Α | В | C | D | E | F | G | | Н | 1 | J | K | L |
|----|----|-------------|----------------------------|----------------|----------------------------|--------------------------|---|-------|--------------|----------------|----------------|--|-------|
| 1 | | | | | | | | | | | | | |
| 2 | ı | Objectiv | ve #5: Sl | JMIFS fo | r Summa | ry Repo | ort Based on A | Add | ding | | | | |
| 3 | | | | | | | | | | | | | |
| 4 | Go | als: | | | | | | | | | | | |
| 5 | 1 | We want a | Cross Tabula | ated Report s | howing Total | Sales by Au | to and Sales Rep. | | | | | | |
| 6 | 2 | We want a | Cross Tabula | ated Report s | howing <mark>Ave</mark> ra | ige Sales by | Auto and Sales Rep. | | | | | | |
| 7 | 3 | We want a | Cross <mark>Tabul</mark> a | ated Report s | howing the C | ount of Tran | nsactions by Auto an | nd Sa | ales Rep. | | | | |
| 8 | 4 | We are ente | ering data ea | ach day and v | we want repo | ting solutio | on to update instantly | y wl | hen we ad | d new sales | data. | | |
| 9 | | | | | | | | | | | | | |
| 10 | | | Formula in | Cell H15: =SU | JMIFS(\$E\$14: | \$E\$30,\$D\$ | 14:\$D\$30,\$G15,\$C\$ | \$14: | :\$C\$30,H\$ | 314) copied | through rang | ge H15:J18 | |
| 11 | | | The SUM Fu | unction is use | ed to calculate | d the Totals | (Alt + = is keyboard | for | SUM Fun | ction). | | | |
| 12 | | | | | | | | | | | | | |
| 13 | | Date 🔻 | Sales Rep | Autos | Sales 🔻 | | Cross Tabulated Re | epor | t for Tota | Sales (\$) | | | |
| 14 | | 2/11/19 | Alma | Chevy | \$38,016 | R . | Autos/ Sales Rep | Alr | ma | Jaeyoung | Tyrone | Total | |
| 15 | | 2/11/19 | Tyrone | Chevy | \$71,182 | | Chevy | 1 | 107,614 | 57,034 | 71,182 | 235,830 | |
| 16 | | | Jaeyoung | Honda | \$70,720 | | Ford | | 37,432 | 63,092 | 98,481 | 199,005 | |
| 17 | | 2/11/19 | | Chevy | \$69,598 | x \ | Honda | | 33,415 | 70,720 | | | |
| 18 | | 2/11/19 | | Honda | \$55,299 | 11 | Toyota | | 47,352 | 95,940 | | 143,292 | |
| 19 | | | Jaeyoung | Toyota | \$63,882 | // | Total | | 225,813 | 286,786 | 382,673 | 895,272 | |
| 20 | | 2/12/19 | | Toyota | \$47,352 | | | _ | | | | | |
| 21 | | 2/12/19 | Tyrone | Ford | \$53,105 | SUMIF | S in cell H15 adds th | he | | | | | |
| 22 | | 2/12/19 | Jaeyoung | Toyota | \$32,058 | Sales f | for the Sales Rep | | E | ach cell in th | ne interior of | this Cross | |
| 23 | | 2/12/19 | Alma | Honda | \$33,415 | 36,000,000,000 | " and the Auto | | 22.0 | | port (Cross-T | · [40] [10] [10] [10] [10] [10] [10] [10] [1 | |
| 24 | | 2/12/19 | Tyrone | Honda | \$71,880 | 20200000000 | y". In order for a | | 5000 | | alculation to | add Sales I | pased |
| 25 | | 2/13/19 | Jaeyoung | Ford | \$63,092 | \$150 SANGE TO THE SANGE | er to be included in | 1 | 0 | n Sales Rep | and Auto. | | |
| 26 | | 2/13/19 | Alma | Ford | \$37,432 | V006000000000000 | lculation, the record show the Sales Rep | ı | | | | | |
| 27 | | 2/13/19 | - 11 | Ford | \$45,376 | | " and the Auto | | | | | | |
| 28 | | | Jaeyoung | Chevy | \$57,034 | "Chev | | | | | | | |
| 29 | | 2/13/19 | 7 | Honda | \$45,881 | | 566 | | | | | | |
| 30 | | 2/13/19 | Tyrone | Honda | \$39,950 | | | | 4 | | | | |

| A | М | N | 0 | Р | Q | R | S | Т | U | V | W | |
|----|---------------------|----------------|-----------------|-----------------|--------------|--------------|-------------|-------------|--------------|-----------|------------|-----|
| 8 | Objective #6 | : COUNT | IFS for S | ummary | Report | Based | on Cou | inting | | | | |
| 9 | | | | • | • | | | | | | | |
| 10 | Formula in Cell N15 | : =COUNTIFS | s(\$D\$14:\$D\$ | 30,\$M15,\$C | \$14:\$C\$30 |),N\$14) co | pied throu | gh range N | 15:P18 | | | |
| 11 | The SUM Function | is used to cal | culated the T | otals (Alt += | is keyboar | d for SUM | Function). | | | | | |
| 12 | | | | | | | | | | | | |
| 13 | Cross Tabulated Re | port for Cou | nting Transac | ctions | | | | | | | | |
| 14 | Autos/ Sales Rep | Alma | Jaeyoung | Tyrone | Total | | | | | | | |
| 15 | Chevy | 2 | 1 | 1 | 4 | | | | | | | |
| 16 | Ford | 1 | 1 | 2 | 4 | | | | | | | |
| 17 | Honda | 1 | 1 | 4 | 6 | | | | | | | |
| 18 | Toyota | 1 | 2 | 0 | 3 | | | | | | | |
| 19 | Total | 5 | 5 | 7 | 17 | | | | | | | |
| 20 | | | | | | | | | | | | |
| 21 | | | | | | | | | | | | |
| 22 | Objective #7 | : AVERA | GEIFS fo | r Summa | ry Repo | ort Bas | ed on A | veragir | ng | | | |
| 23 | | | | | | | | | | - 10° | | |
| 24 | Using the AVERAGE | IFS function | we calculate | d 4 different | averaging | formulas t | o create th | is report | | | | |
| 25 | | | | | | | | | | | | |
| 26 | Cross Tabulated Re | port for Ave | raging Transa | actional Sales | (\$) | | | | | | | |
| 27 | Autos/ Sales Rep | Alma | Jaeyoung | Tyrone | Total | | | | | | | |
| 28 | Chevy | 53,807 | 57,034 | 71,182 | 58,958 | | | | | | | |
| 29 | Ford | 37,432 | 63,092 | 49,241 | 49,751 | | | | | | | |
| 30 | Honda | 33,415 | 70,720 | 53,253 | 52,858 | | | | | | | |
| 31 | Toyota | 47,352 | 47,970 | | 47,764 | | | | | | | |
| 32 | Total | 45,163 | 57,357 | 54,668 | 52,663 | | | | | | | |
| 33 | | | | | | | | | | | | |
| 34 | Formula in Cell N28 | 3: =IF(N15=0, | "",AVERAGE | IFS(\$E\$14:\$I | E\$30,\$D\$1 | 4:\$D\$30,\$ | M28,\$C\$1 | 4:\$C\$30,N | \$27)) copie | d through | range N28: | P31 |
| 35 | Formula in Cell N32 | :=AVERAGE | IFS(\$E\$14:\$E | \$30,\$C\$14: | \$C\$30,N27 |) copied th | rough rang | ge N32:P32 | 2 | | | |
| 36 | Formula in Cell Q28 | 3: =AVERAGE | IFS(\$E\$14:\$I | E\$30,\$D\$14: | \$D\$30,M2 | 8) copied t | hrough rai | nge Q28:Q3 | 31 | | | |
| 37 | Formula in Cell Q32 | 2: =AVERAGE | (E14:E30) | | | | | | | | | |

14. Office 365 Dynamic Array Notes from Worksheet named "O365 Dynamic Arrays".

| A | B C | D | E | F G | Н | 1 | J | K | L | M | N | 0 |
|---|----------------------------|-----------------|------------------------|------------------------------|--|-----------------|---------------------------|----------------|--------------|--------------|--------------|--------|
| | Objective #8: Off | ice 365 I | Dynamic Arra | y Functions for S | Summary Re | port | 9 | | | | | |
| | | | | | | • | | | | | | |
| | In Office 365 Insider Edi | tion, and the | en at a later releas | e date in 2019, Microsoft | has introduced | a new Excel Ca | alculation Engir | ne and a new | set or spe | cial Array F | unctions. | |
| | | | | JE. TRANSPOSE is an old A | | | | | | | | rsa. |
| | In addition, if we make | a Function A | rgument Array Op | eration (putting more th | an one item int | o a function ar | gument with th | e goal of get | tting the Fu | inction to s | pill multipl | e answ |
| | the new Excel Calculation | n Engine wi | Il automatically sp | oill the results in the corr | ect number of c | ells. | | 9766 St | 12.50 | | | |
| | To refer to a Spilled Arra | ay, use the to | op cell in the Spill | ed Array with a pound sig | gn #, like: H20# t | o refer to the | Spilled Array th | at lives in ce | II H20. | | | |
| | For a Spilled Array, the f | ormula lives | s in the first cell ar | nd the remaining cells are | e gray to indicat | e that they spi | lled though the | cells but no | t actually i | n the cell. | | |
| | The Dynamic Array Fund | tions will sp | ill automatically a | nd if the source data cha | nges, the functi | on will automa | itically update. | | | | | |
| | 1993 | | | | | | | | | | | |
| | Goals: | | | | | | | | | | | |
| | 1 We want | a Cross Tabu | lated Report show | ing Total Sales by Auto a | ind Sales Rep. | | | | | | | |
| ŝ | 2 We are us | ing Office 36 | 55 Insider Additior | n, or later in 2019 Microso | oft says that the | se new Dynam | ic Array Formu | as will be av | ailable. | | | |
| | 3 We are er | itering data | each day and we v | vant reporting solution to | o update instan | tly when we ac | ld new sales da | ta. | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| 9 | Date Sales Re | - | Sales 💌 | Cross Tabulated Sa | the first first and the second second second | | | | | | | |
| | 2/11/19 Alma | Chevy | \$38,016 | Sales Rep / Autos | | Jaeyoung | Tyrone | | | | | |
| | 2/11/19 Tyrone | Chevy | \$71,182 | Chevy | \$107,614.00 | \$57,034.00 | \$71,182.00 | | | | | |
| | 2/11/19 Jaeyoung | | \$70,720 | Ford | \$37,432.00 | | \$98,481.00 | | | | | |
| | 2/11/19 Alma | Chevy | \$69,598 | Honda | \$33,415.00 | | | | | | | |
| 8 | 2/11/19 Tyrone | Honda | \$55,299 | Toyota | \$47,352.00 | \$95,940.00 | \$0.00 | | | | | |
| 5 | 2/11/19 Jaeyoung | 74 357 48 5 200 | \$63,882 | | | | | | | | | |
| | 2/12/19 Alma | Toyota | \$47,352 | | | | | | | | | |
| | 2/12/19 Tyrone | Ford | \$53,105 | Formula in Cell G2 | | | Secretary and a secretary | | | | | |
| | 2/12/19 Jaeyoung | | \$32,058 | Formula in Cell H2 | | 1 1 | 77 | | | | | |
| | 2/12/19 Alma | Honda | \$33,415 | Formula in Cell H2 | 21: =SUMIFS(E20 | :E36,C20:C36,H | 20#,D20:D36,G | 21#) | | | | |
|) | 2/12/19 Tyrone | Honda | \$71,880 | | | | | | | | | |
| | 2/13/19 Jaeyoung | 700000 | \$63,092 | | | | | | | | | |
| | 2/13/19 Alma | Ford | \$37,432 | | | | | | | | | |
| 3 | 2/13/19 Tyrone | Ford | \$45,376 | | | | | | | | | |
| 1 | 2/13/19 Jaeyoung | | \$57,034 | | | | | | | | | |
| 5 | 2/13/19 Tyrone | Honda | \$45,881 | | | | | | | | | |
| 5 | 2/13/19 Tyrone | Honda | \$39,950 | | | | | | | | | |