Appending Streams of Data Using Power BI

| The First Stream | 1 |
|--------------------------|----|
| Append The Second Stream | 20 |

Using Power BI

ETL software is used to automate the redundant manipulation of data. In this exercise you will use Power BI to:

Extract the Data file(s) from Excel

Transform the data

Load the transformed data into Excel

The sales data for *Cuddly Stuffed Animals* are stored in an Excel sheet titled January Sales Data. The column headings are in the ninth row, some rows have partial duplicate data and some rows are blank.

| | А | В | С | D | E | F | G | н | 1 | |
|-----|----------------------------------|---------------|-------------------|------------------------|---------------|-------------------------|-----------|--------------|---------------|------------------|
| 1 | | | | | | | | | | |
| 2 | | | | | | | | | | |
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| 6 | | | | | 0 | alallar Charling at Arr | | | | |
| 7 | | | | | Cu | aaly Stuffed An | imais | | | |
| | | | | | | lanuary Sales D | ata | | | |
| 9 | Sales Order # | Salesperson # | Salesperson | Title | Profit Margin | Region # | Regior | n State | Produc | ct |
| 10 | 33003 | 1304 | Martin van Bur | Sales Associate i | 1,908.0 | | 3 South | | Stuffed H | orse |
| 12 | | | | L L | | | | | Stuffed H | orse |
| 12 | 35006 | 1302 | Grover Clevelar | Senior Sales Associate | 936.0 | n | 1 Midwee | t NE | Stuffed P | anda |
| 14 | 33000 | 1302 | Grover crevelar | Senior Sales Associati | 550.0 | 5 | 1 Midwe | | Stuffed P | anda |
| 15 | | | | | | | | | | |
| 16 | 35009 | 1301 | Thomas Jeffers | Sales Associate I | 2,028.0 | D | 2 Northea | st PA | Stuffed P | anda |
| 17 | | | | | 2 028 0 | n | | | Stuffed P | anda |
| 18 | | | | | | | | | | |
| 19 | 55011 | 1305 | George washing | Sales Associate I | 1,500.0 | , | 1 Midwes | NUL IVIN | Stanear | anua |
| 20 | | | | | 1,560.0 | D | | | Stuffed P | anda |
| 21 | 25014 | 1202 | Ulyssos Grant | Sonior Salos Associat | 1 215 0 | n | 1 Midwor | + MN | Stuffod Gi | iraffo |
| 22 | 55014 | 1303 | Orysses Grant | Senior Sales Associati | 1,215.0 | n | 1 Wildwes | | Stuffed Gi | iraffe |
| 24 | | | | | 1,213.0 | 5 | | | Starred G | Tarre |
| 25 | 35017 | 1305 | George Washin | Sales Associate I | 708.0 | D | 2 Northea | st RI | Stuffed Ele | phant |
| 26 | | | 0 | | 708.0 | D | | | Stuffed Ele | phant |
| 27 | | | | | | | | | | |
| 28 | 35025 | 1303 | Ulysses Grant | Senior Sales Associate | 1,272.0 | D | 2 Northea | st ME | Stuffed H | orse |
| 29 | | | | | | | | | Stuffed H | orse |
| 30 | | | | | ſ | | | | | - |
| 31 | 35026 | 1301 | Thomas Jeffers | Sales Associate I | 1,716.0 | | Samnlo | Ronart | | uin |
| 32 | | | | | | • | Jampie | Report | | uin |
| 33 | 25027 | 1201 | Thomas loffers | Calos Associato I | 1 215 0 | Droduct | Unite | Salas | Drofit Morgin | |
| 25 | 33027 | 1301 | momas Jerrers | coales Associate I | 1,215.0 | Product | Units | Sales | Profit Wargin | i le |
| 36 | | | | | | Stuffed Elephant | 4,392 | \$109,800.00 | \$ 64,782.00 |) 'e |
| 37 | 35032 | 1303 | Ulysses Grant | Senior Sales Associate | 1,584.0 | Stuffed Giraffe | 8,052 | \$169,092.00 | \$ 90,585.00 | 0 _{lin} |
| 38 | | | | | | Stuffed Horse | 12,120 | \$266,640.00 | \$160,590.00 | 0 in |
| | Introduction | roduction Ja | anuary Sales Data | Products Salesp | person Regi | Stuffed Panda | 7 499 | \$172 224 00 | \$ 97 344 00 | 0 |
| | | | | | | Stuffed Pariod | 7,700 | \$172,224.00 | \$ 57,544.00 | |
| Ν | loto: Vou | cannot | avtract d | ata from an | onen | Stuffed Penguin | 5,016 | \$100,320.00 | \$ 55,176.00 | J |
| 1 1 | | Carmol | Exilati u | ala nun dh | open | Stuffed Unicorn | 3,060 | \$ 73,440.00 | \$ 40,545.00 | 0 |

Note: You cannot extract data from an open Excel file so make sure that the Excel file is closed before starting to input the data.

1

Total

40,128 \$891,516.00 \$509,022.00

Start Power BI Desktop

Operation 1: Get Data – Input Excel file

Select "Get Data" from the "External data" group under the "Home" tab.



| Select the file. | | | | |
|------------------|----------------------------------|---------------------|-------------------------------|--------|
| | Name | Date modified | Туре | Size |
| | Stuffed Animals.ETL.Demo | 11/25/2021 10:21 AM | Microsoft Excel W | 857 |
| Select "Open". | ~ < | | | > |
| | e name: Stuffed Animals.ETL.Demo | ✓ E | cel Files (*.xls;*.xlsx;*.xls | |
| | | | | m;*: ~ |

Highlighting the desired sheet does **not** activate the Load and Edit buttons.

Navigator



No items selected for preview

Double click on "January Sales Data" or you can select the check box on the left of "January Sales Data".

| | Column2 | Column3 | Column4 |
|--------------------|---|---|--|
| January Sales Data | null | null | |
| Sales Order # | Salesperson # | Salesperson | Title |
| 35005 | 1304 | Martin Van Buren | Sales Associat |
| nuli | null | null | |
| null | null | null | |
| 35006 | 1302 | Grover Cleveland | Senior Sales A |
| null | null | null | |
| nuli | null | null | |
| 35009 | 1301 | Thomas Jefferson | Sales Associat |
| nuli | null | null | |
| 35011 | 1205 | George Washington | Salas Associat |
| | null | null | Jales Associat |
| null | null | null | |
| 35014 | 1303 | Ulysses Grant | Senior Sales A |
| null | null | null | |
| nuli | null | null | |
| 35017 | 1305 | George Washington | Sales Associat |
| null | null | null | |
| nuli | null | null | |
| 35025 | 1303 | Ulysses Grant | Senior Sales A |
| nuli | null | null | |
| nuli | null | null | |
| | Sales Order # 35005 null 35006 null 35006 null 35009 null 35009 null 35011 null 35014 null 35014 null 35014 null 35014 null 35015 null 1000 35017 null 1000 1000 1000 1000 1000 1000 1000 1 | Sales Order # Salesperson # 35005 1304 null null null null 35006 1302 null null 35009 1301 null null 1 1303 1 1303 1 null 1 1303 <t< td=""><td>Sales Order # Salesperson # Salesperson 35005 1304 Martin Van Buren null null null null null null 35006 1302 Grover Cleveland null null null 35006 1302 Grover Cleveland null null null null null null null null null 13009 1301 Thomas Jefferson null null null null 1301 1305 George Washington null null null null 1303 Ulysses Grant null null null null null 1301 1303 George Washington null null null null null 1301 null null null 1303 Ulyses Grant null 1304 null null null<</td></t<> | Sales Order # Salesperson # Salesperson 35005 1304 Martin Van Buren null null null null null null 35006 1302 Grover Cleveland null null null 35006 1302 Grover Cleveland null null null null null null null null null 13009 1301 Thomas Jefferson null null null null 1301 1305 George Washington null null null null 1303 Ulysses Grant null null null null null 1301 1303 George Washington null null null null null 1301 null null null 1303 Ulyses Grant null 1304 null null null< |

Select "Transform Data" or "Edit" and a new window called Power Query Editor opens.

In the Power Query window, Power BI Desktop records each data modifications in the "Applied Steps" section.

| d ≠ Untit d - Power Query | Editor | selp | | | | - | X |
|--|--|---|--|---|---|--------------------------------------|---|
| Close & New Recent Enter Apply * Source * Sources * Data Close New Query | Data source Parameters Parameters | Advanced Editor Advanced Editor Manage * Query Manage | Remove Columns · Rows · Rows · S Columns · Reduce Rows · S | L Column - By Lar Spir Column - By Lar Spir Column - Transfor | : Any * In Merge Queries * In Merge Queries * In Append Queries * In Append Queries * In Combine Files. | Text Analytics | |
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| | 2 Sales Order # 3 35005 | Salesperson # 1304 | Salesperson Martin Van Buren | Titie Sales Associate I | Profit Margin Region # | January Sales Data All Properties | |
| | 4 null 5 null | กมส์ กมส์ | กมที คมที | null Iun | null | APPLIED STEPS | |
| | 6 35006 7 null | 1302 null | Grover Cleveland | Senior Sales Associate null | Ior Sales Associate 936 null null | | 0 |
| | 8 null 9 35009 | null 1301 | null Thomas Jefferson | null Sales Associate I | null 2028 | > Changed Type | |
| | 11 null 12 35011 | กมพี 1305 | our out George Washington | null Sales Associate I | 2028 null 1560 | | |

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2

35005

Operation 2: Fix the Headers – The field headers are in the third row of the source document. Remove the top two rows to move the headers to the first row and then promote them to the Query Editors' headers.

| | ABC Column1 | ABC 123 Column2 | ABC 123 Column3 | • | ABC Column4 | • | ABC 123 Column5 | • | ABC 123 Column6 |
|---------------------------|-------------------------------|---|--|--|--|---|--|--|--|
| 1 | Cuddly Stuffed Animals | nul | 1 | null | | null | | null | |
| 2 | January Sales Data | nul | 1 | null | | null | | null | |
| 3 | Sales Order # | Salesperson # | Salesperson | | Title | | Profit Margin | | Region # |
| 4 | 35005 | 1304 | 4 Martin Van Buren | | Sales Associate | 2 | | 1908 | |
| 5 | null | nul | 1 | null | | null | | null | |
| 6 | null | nul | ll D. Crever Cleveland | null | Conies Coles A | null | | null | |
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| Sel | lect "Remove R | 2 January Sales Dat | a | | | null | | Remove | Errors |
| Sel | lect "Remove T | op Rows". | | | | | | | |
| Ent | ter a "2" to remo | ove top three re | ows. | | | | | | |
| | | Rer Speci Numb | nove Top Rov fy how many rows to per of rows | VS remove fror | n the top. | | | | × |
| Γhe | en click "OK". <mark>–</mark> | | | | | | | ОК | Cancel |
| | ABC Column1 | ABC Column2 | ABC 123 Column3 | | ABC Column4 | | ABC 123 Column5 | | ABC 123 Column6 |
| 1 | Sales Order # | Salesperson # | Salesperson | | Title | | Profit Margin | | Region # |

Sales Associate I

1908

1304 Martin Van Buren

To promote the first row in the current data to Query Editors' headers, select "Use First Row as Headers".

| File | Home | Transf | orm | Add Column | View | Tools Help | | | | | | | | |
|---------|-------------|--------------------|------|--------------|------------------------|----------------------|-----------|--------------|---------------------|----------|----------|----|------|---|
| | | | | | | Properties | | \mathbf{X} | | A↓ A↓ | | 2 | Data | Type: Any ▼ Jse First Row as Headers ▼ |
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| Close | Ne | w Query | | Data Sources | Parameters | Query | Manage | Columns | Reduce Rows | Sort | | | | Use Headers as First Row |

| | ↓ 1 ² ₃ Sales Order # | 1 ² 3 Salesperson # | A ^B _C Salesperson 💌 | A ^B _C Title | 1 ² 3 Profit Margin | 1 ² 3 Region # |
|---|---|--------------------------------|---|-----------------------------------|--------------------------------|---------------------------|
| 1 | 35005 | 1304 | Martin Van Buren | Sales Associate I | 1908 | |
| 2 | null | null | null | null | null | |
| 3 | null | null | null | null | null | |
| 4 | 35006 | 1302 | Grover Cleveland | Senior Sales Associate | 936 | |
| 5 | null | null | null | null | null | |

Note: After you perform a transformation, the changes are recoded in the "Applied Steps" section. If you incorrectly did a step, you can easily delete the step and do it again.

▲ APPLIED STEPS

| Source | ÷ |
|------------------|---|
| Navigation | ÷ |
| Removed Top Rows | |
| Promoted Headers | ÷ |
| ➤ Changed Type | |
| | |

Operation 3: Filter Rows – Exclude rows that do not contain Sales Order Number

You can observe that there are several rows that do not contain a sales order number. We can add a filter step which will remove such rows. Note that we are not deleting anything from the source data file. This will just filter such data out and exclude these records from the final table.

Click on the "drop-down" next to "Sales Order #", Uncheck "null" and Click "OK".



Notice that "Filtered Rows" step is automatically added on the right side in the "Applied Steps" section.

▲ APPLIED STEPS

| Source | ÷ |
|------------------|----|
| Navigation | ÷. |
| Removed Top Rows | |
| Promoted Headers | |
| Changed Type | |
| ➤ Filtered Rows | |
| | |
| | |

The Data in the Fields Must Conform to Predefined Rules.

In the original Excel file, The Cuddly Stuffed Animals company provided the only acceptable values for "Product", "Salesperson" and "Region". Sometime data is entered incorrectly into the data.

| Code | Salesperson |
|------|-------------------|
| 1301 | Thomas Jefferson |
| 1302 | Grover Cleveland |
| 1303 | Ulysses Grant |
| 1304 | Martin Van Buren |
| 1305 | George Washington |
| 1306 | John Tyler |
| | |

Operation 4 :- Verify that the Salesperson field is correct

Click on the "drop-down" next to "Salesperson".

The "Salesperson" field can only contain one of the six salespersons. Browse the data in the "Salesperson" field to verify that all the data is correct. Make any changes that are required.

| "Thomass" must be | | 1 ² 3 Sales Order # | Τ. | 1 ² 3 Salesperson # A ^B C Salesperson • |
|------------------------|------|--------------------------------|-----------------|---|
| roplaced with "Thomas" | 1 | 35 | ₽↓ | Sort Ascending |
| replaced with Thomas. | 2 | 35 | Sort Descending | |
| | 3 | 35 | | Clear Sort |
| | 4 35 | Clear Filter | | |
| | 5 | 35 | "× | |
| | 6 | 35 | | Remove Empty |
| | 7 | 35 | | Text Filters |
| | 8 | 35 | | Search |
| | 9 | 35 | | Sector |
| | 10 | 35 | | ✓ (Select All) |
| | 11 | 35 | | George Washington |
| | 12 | 35 | | Grover Cleveland |
| | 13 | 35 | | John Iyler |
| | 14 | 35 | | Martin Van Buren |
| | 15 | 35 | | Thomas Jefferson |
| | 16 | 35 | | |
| | 17 | 35 | | |
| | 18 | 35 | | Cancel |
| | 10 | 20 | | |
| Select Cancel. | | | | |

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| File | Home | Transform | Add Column | View | Tools Help | | | | | |
|--------------------------|-----------------------------|------------------------|---|--------------------------------------|--------------------------------------|--|---|-----------------------|----------------------|--|
| Close & Apply • Close | New F Source - So New | Recent urces • Data | Data source settings Data Sources | Manage Parameters V Parameters | Refresh Preview Manage - Query | Choose Remove Columns • Columns • Manage Columns | Keep Remove Rows • Rows • Reduce Rows | A Z↓ Z↓ Sort | Split Column • By | Data Type: Text • Use First Row as Headers 1 2 2 Replace Values Transform |

Select Replace Values

Replace Values

| Value To Find | |
|--------------------|--|
| Thomass | |
| Replace With | |
| Thomas | |
| > Advanced options | |
| | |

Value to find "Thomass" Replace with "Thomas"

Select OK.

Click on the "drop-down" next to "Salesperson".

| ₽↓ | Sort Ascending | | |
|---------------------------|----------------------------------|----|--------|
| Z↓ | Sort Descending | | |
| | Clear Sort | | |
| $\mathbb{T}_{\!\!\times}$ | Clear Filter | | |
| | Remove Empty | | |
| | Text Filters | | ÷ |
| | Search | | |
| | (Select All) | | |
| | George Washington | | |
| | Grover Cleveland | | |
| | 🖌 John Tyler | | |
| | Martin Van Buren | | |
| | Thomas Jefferson | | |
| | ✓ Ulysses Grant | | |
| | | OK | Cancel |
| | | | |

Select Cancel.

A step has been added to the Applied Steps.

| APPLIED STEPS | |
|------------------|----|
| Source | 41 |
| Navigation | 45 |
| Removed Top Rows | 4 |
| Promoted Headers | 4 |
| Changed Type | |
| Filtered Rows | 4 |
| ➤ Replaced Value | |
| | |

Operation 5 :- Verify that the Product field is correct

Click on the "drop-down" next to "Region".

| Code | Region |
|------|-----------|
| 1 | Midwest |
| 2 | Northeast |
| 3 | South |
| 4 | West |

The "Region" field can only contain one of the six products. Browse the data in the "Region" field to verify that all the data is correct. Make any changes that are required.

| 1 ² 3 Profit Margin | • | 1 ² 3 Region # | • | A^{B}_{C} | Region | | - |
|--------------------------------|----------------|-------------------------------|---|-------------|--------|--------|---|
| 1 | ₽↓ | Sort Ascending | | | | | |
| | Z↓ | Sort Descending | | | | | |
| 2 | | Clear Sort | | | | | |
| 1 | T _× | Clear Filter | | | | | |
| | | Remove Empty | | | | | |
| 1 | | Text Filters | | | | | Þ |
| 1 | | Search | | | | | |
| 1 | | ✓ (Select All) | | | | | |
| 2 | | ✓ Midwest | | | | | |
| 1 | | Northeast | | | | | |
| | | ✓ South | | | | | |
| 1 | | ✓ West | | | | | |
| 1 | | | | | ОК | Cancel | |
| 1. | | | | 004 | | | |

No changes must be made, select Cancel.

| Product ID | Product | |
|------------|------------------|--|
| 101 | Stuffed Penguin | |
| 102 | Stuffed Horse | |
| 103 | Stuffed Unicorn | |
| 104 | Stuffed Giraffe | |
| 105 | Stuffed Panda | |
| 106 | Stuffed Elephant | |

Click on the "drop-down" next to "Product".

The "Product" field can only contain one of the six products. Browse the data in the "Product" field to verify that all the data is correct. Make any changes that are required.



No changes must be made, select Cancel.

Operation 7: Change the data type. Change the type of all numeric fields that will be used in calculations to "Fixed Decimal". The "# of units should have zero decimal places and dollar values should have two decimal places.

Click on the $\frac{123}{123}$ in the left-hand corner of the field "Sales".

Select "\$ Fixed decimal number".

Do the same to the "Profit Margin" Field.

| ² 3 S | ales 💌 |
|------------------|----------------------|
| 1.2 | Decimal Number |
| \$ | Fixed decimal number |
| 1 ² 3 | Whole Number |
| % | Percentage |
| • | Date/Time |
| | Date |
| Ŀ | Time |
| ₿ | Date/Time/Timezone |
| Ō | Duration |
| А ^В С | Text |
| Х∕ | True/False |
| Ξ | Binary |
| | Using Locale |
| | |

Operation 8: Load data. Click on "Close and Apply"

This loads the data onto Power BI from Power Query Editor.



Now you'll be back to the main window of Power BI.



Operation 9: Create a "Table".

Click on the Table icon under the Visualization section to add a table.

| | Visualizations > | Fields | » |
|------------------------|-------------------------------------|---|--|
| | | ✓ Search > Ⅲ January Sales Data | New measure New column New quick measure Refresh data Edit query lacromontal refresh |
| | Values | | Manage aggregations |
| Select the dots to the | Rename Delete from model Hide | | |
| | | | View hidden Unhide all Collapse all |
| Salaat "Expand all" | | | Expand all |

Select "Expand all".

The order that you select the fields is used to determine the order in which the fields are displayed in the table. Click on the box next to each field in the order that you want the fields to be displayed.

- 1. Product
- 2. # of units
- 3. Sales
- 4. Profit Margin

| Product | # of units | Sales | Profit Margin |
|------------------|------------|--------|---------------|
| Stuffed Elephant | 4392 | 109800 | 64782 |
| Stuffed Giraffe | 8052 | 169092 | 90585 |
| Stuffed Horse | 12120 | 266640 | 160590 |
| Stuffed Panda | 7488 | 172224 | 97344 |
| Stuffed Penguin | 5016 | 100320 | 55176 |
| Stuffed Unicorn | 3060 | 73440 | 40545 |
| Total | 40128 | 891516 | 509022 |

| 8 | R | |
|---------------|---|---------------------|
| Values | | |
| Product | | $\sim \times$ |
| # of units | | $\sim \times$ |
| Sales | | $\checkmark \times$ |
| Profit Margin | | $\sim \times$ |
| | | |

Operation 10: Exporting data to Excel



Type the name of the file "Report by Product.csv".

| 🧧 Save As | _ | | | | |
|--------------------------|------------|------------------------------------|-------------------|--------------------|---------------|
| $\leftarrow \rightarrow$ | ∕ ↑ 💄 | « Local Disk (C:) > Sample - Power | BI ~ Ü | 🔎 Search Samp | le - Power Bl |
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| , v | | | | | |
| F | ile name: | Report by Product.csv | | | |
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Select Save.

Open the original excel file

| Select the file. | ^ N | lame | Date modified | Туре | Size |
|------------------|----------|--------------------------|---------------------|------------------------------|--------|
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| | le name: | Stuffed Animals.ETL.Demo | ✓ Ex | el Files (*.xls;*.xlsx;*.xls | m;*: ~ |
| | | | | Onen | |

To open the new report, navigate in file manager and double click on the "Report by Product.csv" file.

Copy this tab to the original Excel by right clicking on the tab Report by Product and selecting "Move or Copy".

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| | А | В | С | D | | Е | |
| 1 | Product | # of units | Sales | Profit N | Mar | gin | |
| 2 | Stuffed Ele | 4392 | 109800 | 647 | 782 | | |
| 3 | Stuffed Gir | 8052 | 169092 | 905 | 585 | | |
| 4 | Stuffed Ho | 12120 | 266640 | 1605 | 590 | | |
| 5 | Stuffed Pa | 7488 | 172224 | 973 | 344 | | |
| 6 | Stuffed Pe | 5016 | 100320 | 551 | 176 | | |
| 7 | Stuffed Un | 3060 | 73440 | 405 | 545 | | |
| 8 | | | | | | | |
| 9 | | | | | | | |
| 10 | | | | | ln | sert | |
| 11 | | | | | D | elete | |
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CSA Power BI The First Stream

| Select the name of the original file. | Move or Copy | ? | × |
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Rename the tab as "January Report by Product". Add totals, format the sheet, save and close the Excel file.

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| | А | В | С | D | E | 1 |
| 1 | Product | Units | Sales | Profit Margin | | |
| 2 | Stuffed Elephant | 4,392 | \$109,800.00 | \$ 64,782.00 | | |
| 3 | Stuffed Giraffe | 8,052 | \$169,092.00 | \$ 90,585.00 | | |
| 4 | Stuffed Horse | 12,120 | \$266,640.00 | \$160,590.00 | | |
| 5 | Stuffed Panda | 7,488 | \$172,224.00 | \$ 97,344.00 | | |
| 6 | Stuffed Penguin | 5,016 | \$100,320.00 | \$ 55,176.00 | | |
| 7 | Stuffed Unicorn | 3,060 | \$ 73,440.00 | \$ 40,545.00 | | |
| 8 | Total | 40,128 | \$891,516.00 | \$509,022.00 | | |
| 9 | | | | | | |
| 10 | | | | | | |
| 11 | | | | | | |
| 12 | | | | | | |
| 13 | | | | | | |
| • | 🔹 🕨 🗛 🖌 🖌 🖌 🖌 🖌 | 1 Jan Rep | ort by Produ | ct (+) | • | |

Operation 11: Save the "Flow and Data"

Select "File" > "Save as".

| <mark>ጫ</mark> 🔒 ' | 5 🗢 = 🛛 ver | 1 - Power | BI Deskto | р | | | | | | | | |
|----------------------|-----------------------------|---------------|---------------------|---------------|-------------------|---------|---------------|---------------|-------------------|---------|----------|-------------------|
| File | Home | View | Modeling | J | Help | | | | | | | |
| Paste | K Cut Copy ✓ Format Painter | Get Data 🕶 | Recent Sources • | Enter Data | Edit Queries - | Refresh | New Page • | New Visual | Ask A Question | Buttons | Text box | From Marketpla |
| с | lipboard | | E | xternal | data | | | | Insei | rt | | Custor |

Type the name of the file.

| Save As | | | × |
|--|---|-----------------|---------------------------------------|
| $\leftarrow \rightarrow$ \checkmark \uparrow \blacksquare « Local Disk (C:) > Sample - Power | BI ~ Ŭ | ,O Search Sampl | e - Power Bl |
| Organize New folder | | | · · · · · · · · · · · · · · · · · · · |
| Name No ite | Date modified ems match your search. | Туре | Size |
| File name: Cuddly Stuffed Animals | | | ~ |
| Save as type: Power BI file (*.pbix) | | | ~ |
| ∧ Hide Folders | | Save | Cancel |

Select Save.

Part 2

The "February-December Sales Data" tab contains data that was created in a different system than the "January Sales Data". You cannot append two data sets unless the field names and field types are identical. The fields, however, may be ordered differently.

January Sales Data

| | Α | В | С | D | E | F | G | н | 1 | J | к | L |
|----|---------------|-----------------|-----------------|-------------------------|----------------|--------------------|---------|-------|---------------|------------|----------|---|
| 1 | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | |
| 7 | | | | | Cud | dly Stuffed Anim | als | | | | | |
| 8 | | | | | Ja | nuary Sales Dat | a | | | | | |
| 9 | Sales Order # | Salesperson # | Salesperson | Title | Profit Margin | Region # | Region | State | Product | # of units | Sales | |
| 10 | 35005 | 1304 | Martin Van Bure | Sales Associate I | 1,908.00 | 3 | South | TN | Stuffed Horse | 144 | 3,168.00 | |
| 11 | | | | | | | | | Stuffed Horse | | 3,168.00 | |
| 12 | | | | - | | | | | | | | |
| 13 | 35006 | 1302 | Grover Clevelar | Senior Sales Associate | 936.00 | 1 | Midwest | NE | Stuffed Panda | 72 | 1,656.00 | |
| | Introduc | tion January Sa | ales Data Febru | ary-December Sales Data | Products Sal | lesperson Region | ۲ | 4 | | | | - |

February-December Sales Data

| di - | A | В | C | D | E | F | G | н | 1 | J | |
|------|-----------|--------------------------|------------------------|---------------|-------------|-------------|---------------|------------------|------------------------|---------------|---|
| | | | | | | | | | | | |
| | | | | C | uddly Stuff | ed Animals | | | | | |
| | | | | Fel | bruary-Dece | ember Sales | | | | | |
| | Order # | SalesPerson | Title | Region Name | Region Code | *State* | Article | # of pieces sold | Selling Price Per Unit | Profit Margin | |
| | 37060 13 | 303 : Ulysses Grant | Senior Sales Associate | South | 3 | TX | Stuffed Horse | 120 | 22.00 | 1,590.00 | |
| | | | | | | | Stuffed Horse | | | 1,590.00 | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | 37064 13 | 301 : Thomas Jefferson | Sales Associate I | Northeast | 2 | CT | Stuffed Horse | 144 | 22.00 | 1,908.00 | |
| | | | | | | | Stuffed Horse | | | | |
| | Introduct | tion January Sales Dat | ta February-Decemb | er Sales Data | Products | Salesperson | Region (+) | 1 4 | | | - |
| by . | 10 | | | | | | | | | E | |

As you review the new sheet note the differences:

- 0. The column headings are in row 4.
- 1. The column headings are different.
- 2. The columns are in a different order.
- 3. Column B contains both the Salesperson's number and name.
- 4. Selling Price Per Units has replaced Sales.

| | | - Call | | 000 | • | |
|---|------------------|-------------|---------|---------|---------------|---|
| | А | В | C | 2 | D | E |
| 1 | Product | # of units | Sal | es | Profit Margin | |
| 2 | Stuffed Elephant | 50,508 | \$1, | 262,700 | \$744,993 | |
| 3 | Stuffed Giraffe | 104,772 | \$2, | 200,212 | \$1,178,685 | |
| 4 | Stuffed Horse | 150,504 | \$3, | 311,088 | \$1,994,178 | |
| 5 | Stuffed Panda | 93,924 | \$2, | 160,252 | \$1,221,012 | |
| 6 | Stuffed Penguin | 58,752 | \$1, | 175,040 | \$646,272 | |
| 7 | Stuffed Unicorn | 48,900 | \$1, | 173,600 | \$647,925 | |
| 8 | Total | 507,360 | \$ 11, | 282,892 | \$ 6,433,065 | |
| 9 | | | | | | |
| | Annua | l Report by | Product | (+) | | • |
| - | | | | | | |

Sample Report

Operation 12: Get Data – Input Second Data Set From

Select "Get Data" from the External Data Group Under Home tab.



| | Name ^ | Date modified | Туре | Size |
|----------------|----------------------------|---------------------|-------------------|------|
| | 🛱 Stuffed Animals.ETL.Demo | 11/25/2021 10:21 AM | Microsoft Excel W | 85 |
| | | | | |
| Select "Open". | | | | |
| Select "Open". | ~ < | | | 3 |

| 4 | Stuf | fed Animals.ETL.Demo.xlsx [8] |
|---|------|-------------------------------|
| ſ | | February-December Sales Data |
| | | Introduction |
| | | Jan Report by Product |
| | | January Sales Data |
| | | Products |
| | | Region |
| | | Report by Product |
| | | Salesperson |

Highlighting the desired sheet does **not** activate the Load and Edit buttons.

Double click on "February-December Sales Data" or you can select the check box on the left of "February-December Sales Data". Navigator

| ٩ | February-December | Sales Data | | C |
|------------------------------------|-------------------------|--------------------------|------------------------|-------|
| Display Options 🔹 🗋 | Cuddly Stuffed Animals | Column2 | Column3 | Col |
| Stuffed Animals.ETL.Demo.xlsx [8] | February-December Sales | null | nul | 1 |
| ✓ Ⅲ February-December Sales Data | Sales Order # | SalesPerson | Title | R |
| | 37060 | 1303 : Ulysses Grant | Senior Sales Associate | S |
| Im In Report by Product | null | null | nul | / |
| | null | null | nul | - |
| | null | null | nul. | / |
| Products | 57004 | 1501 . Hiomas serierson | sales Associate i | / |
| 🗖 💭 Region | null | null | nul | |
| Report by Product | null | null | nul | 1 |
| 🗖 🖽 Salesperson | 37073 | 1303 : Ulysses Grant | Senior Sales Associate | N |
| | null | null | nul | 1 |
| | null | null | nul | 1 |
| | null | null | nul | 1 |
| | 37079 | 1306 : John Tyler | Senior Sales Associate | s |
| | null | null | nul | / |
| | null | null | nul | - |
| | null | null | nul | / |
| | 37085 | 1303 : Olysses Grant | senior sales Associate | 1 |
| | null | null | nul | |
| | null | null | nul | 1 |
| | 37093 | 1305 : George Washington | Sales Associate I | N |
| | < | | > | |
| | | | | |
| | | Load | Transform Data Car | ncel |
| The data preview will be displayed | | | | |
| The data preview will be displayed | • | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

Select "Transform Data" or "Edit" and a new window called Power Query Editor opens.

Now there are two queries.

| January Sales Data | | ABC 123 Cuddly Stuffed Animals | A ^B _C Column2 | A ^B _C Column3 | A PROPERTIES | |
|------------------------|-------|--------------------------------|-------------------------------------|-------------------------------------|------------------------------|-----|
| February-December Sale | 1 | February-December Sales | null | | Name | |
| | 2 | Sales Order # | SalesPerson | Title | February-December Sales Data | |
| | 3 | 37060 | 1303 : Ulysses Grant | Senior Sales Associa | All Properties | |
| | 4 | null | null | | | |
| | | null | null | | APPLIED STEPS | |
| | 6 | null | null | | Source | 4 |
| | 7 | 37064 | 1301 : Thomas Jefferson | Sales Associate I | Narigation | 4 |
| | 8 | null | null | | Promoted Headers | - 9 |
| | 9 | null | null | | × Changed Type | |
| | 10 | null | null | | | |
| | 11 | 37073 | 1303 : Ulysses Grant | Senior Sales Associa | | |
| The program adde | ed tl | ne steps 🖌 APPL | IED STEPS | | | |

inputted the data. Note that it Navigation 4 did not correctly find the row 4 Promoted Headers that contains the "Headers". × Changed Type Therefore, some steps must be deleted. APPLIED STEPS Select the step, "Changed Type". Source ф Navigation ÷ Promoted Headers ÷ imes Changed Type φ. Edit Settings Right click and select "Delete". Rename × Delete Delete Until End Insert Step After Move Up Move Down Extract Previous View Native Query **APPLIED STEPS** Properties... Delete the step "Promoted Headers", leaving us with Source 슈 two steps. × Navigation

Operation 13: Fix the Headers – The field headers are in the third row of the source document. Remove the top two rows to move the headers to the first row and then promote them to the Query Editors' headers.

| | ABC Column1 | ABC 123 Column2 | ABC 123 Column3 | - | ABC 123 Column4 | - | ABC 123 Column5 | |
|------|--------------------------------------|-----------------------------------|---|------------|--------------------|--------------------|----------------------|--------|
| 1 | Cuddly Stuffed Animals | nuli | 1 | null | | null | | |
| 2 | February-December Sales | nul | 1 | null | | null | | |
| 3 | Sales Order # | SalesPerson | Title | | Region | | Region # | |
| 4 | 3706 | 1303 : Ulysses Grant | Senior Sales Associate | 2 | South | | | |
| Se | lect "Remove Ro | ws". | | | | | | |
| Fi | le Home Transform | Add Column View T | ools Help | | | | | |
| | 🎽 🗋 🖿 | ▶ = | Properti | es | | | | |
| Clos | e & New Recent Enter | Data source Manage | Refresh Manage | | Choose Remov | e Keep | Remove AV Split C | Group |
| App | ly • Source • Sources • Data | settings Parameters * | Preview • • • • • • • • • • • • • • • • • • • | | Columns - Column | s • Rows • | Rows Column Column | Ву |
| CIO | ise New Query | Data Sources Parameters | Query | | Manage Column | s Reduc | Remove Top Rows | _ |
| Q | ueries [2] | \times \checkmark f_x = Sou | rce{[Item="Februa | ry-Dece | mber Sales Dat | a" kind="S | Remove Alternate Row | 15 |
| | January Sales Data | ABC Column1 | ABC Column2 | | ABC 122 Follumi | 13 | Remove Alternate Row | |
| | February-December Sale | 1 Cuddly Stuffed Animals | 125 | | | | Remove Duplicates | |
| | repracing becomber balom | 2 February-December Sales | | | null | | | - |
| Sel | lect "Remove To ter a "2" to remo | p Rows". | 5. | | | | | |
| | | Remove | e Top Rows | | | | | × |
| | | Specify how | many rows to remove f | rom the to | р. | | | |
| | | Number of r | DWS | | | | | |
| The | en click "OK". — | 2 | | | | | OK Cancel |] |
| | ABC Column1 ABC 123 | Column2 ABC Co | lumn3 | ABC Colum | n4 💌 | ABC 123 Column5 | ABC 123 Column6 | |
| 1 | Sales Order # Sal | esPerson Title | | Region | | Region # | State | |
| 2 | 37060 13 | 3 : Ulysses Grant Senior | Sales Associate | South | | | 3 TX | \sim |

To promote the first row in the current data to Query Editors' headers, select "Use First Row as Headers".

| File | Home | Transfo | orm | Add Column | View | Tools | Help | | | | | | | | |
|---------|--|------------|-------|---------------------------|--------------|--------|------------------------|--------|-------------------------|---------------|------------------|----------|-----|-----------|---------------------------------|
| Close a | & New Red | <u>ent</u> | Enter | Data source | Manage | Refre | Advanced Editor | Choos | e Remove | Keep Remove | A↓ A↓ | Split | GIO | Data Type | : Any ▼ rst Row as Headers ▼ |
| Apply | Source Source S | ces 🕇 | Data | settings | Parameters * | Previe | w • 🖽 Manage | Column | s 🕈 Columns 🏲 | Rows • Rows • | | Column * | Ву | Use | FIRST ROW as Headers |
| Close | New C | Query | | Data Sources | Parameters | | Query | Mana | ge Columns | Reduce Rows | Sort | | | Use | Headers as First Row |
| | | | | | | | | | | | | | | | |
| | 2 ₃ Sales Order # | | - | A ^B C SalesPer | rson | - | A ^B C Title | - | A ^B C Region | - | 1 ² 3 | Region # | | - | A ^B C State |
| 1 | | | 37060 | 1303 : Ulysse | es Grant | 5 | Senior Sales Associate | | South | | | | | 3 | тх |
| 2 | | | null | | | null | | null | | | | | | null | |
| 3 | | | null | | | null | | null | | | | | | null | |

Note: After you perform a transformation, the changes are recoded in the "Applied Steps" section. If you incorrectly did a step, you could easily delete the step and do it again.

▲ APPLIED STEPS

| Source | × |
|------------------|----|
| Navigation | ÷. |
| Removed Top Rows | ÷. |
| Promoted Headers | |
| × Changed Type | |
| | |

Operation 14: Filter Rows – Exclude rows that do not contain Sales Order Number

You can observe that there are several rows that do not contain a "Title". Add a filter step which will remove such rows. Note that we are not deleting anything from the source data file. This will just filter such data out and exclude these records from the final table.

Click on the "drop-down" next to "Title", Uncheck "null" and Click "OK"



Notice that "Filtered Rows" step is automatically added on the right side in the "Applied Steps" section.

| Source | × |
|------------------|----|
| Navigation | * |
| Removed Top Rows | * |
| Promoted Headers | ÷. |
| Changed Type | |
| ➤ Filtered Rows | |

Before we append the "February-December Sales Data" set to the "January Sales Data" set the "Field Names" and "Types" must be identical.

There are ten fields in the "February-December Sales Data" stream, and we will review them one by one making all necessary changes.

| ou | naary daory | | | | | | | | | | |
|-----------------|--------------------------------|------|--------------------------------|------------------------------|----------|------------------------|--------------------------|------------------|----------|---------------------------|----------|
| | 1 ² 3 Sales Order # | • | 1 ² 3 Salesperson # | A ^B C Salesperson | • | A ^B C Title | • | \$ Profit Margin | | 1 ² 3 Region # | . |
| 1 | 35 | 5005 | 1304 | Martin Van Bure | n | Sales Associate I | | | 1,908.00 | 1 | 3 : |
| 2 | 35 | 5006 | 1302 | Grover Cleveland | ł | Senior Sales Asso | ociate | | 936.00 | 1 | 1 |
| | | | | | | | | | | | |
| ^{AB} C | Region | - | A ^B C State | ✓ A ^B C I | Product | - | 1 ² 3 # of un | its | - \$ | Sales | - |
| Sou | th | | TN | Stuff | ed Horse | | | | 144 | | 3,168.00 |
| Mid | lwest | | NE | Stuff | ed Panda | | | | 72 | | 1,656.00 |

January Query

February-December Query

| 1 | 2 | 3 | 4 | 5 | 6 |
|--|---|------------------------|---------------------------------------|-------------------------------|-----------------------------------|
| □ value of the second | ▼ A ^B _C SalesPerson | A ^B C Title | ▼ A ^B _C Region | 1 ² 3 Region # 		▼ | A ^B _C State |
| 1 37 | 060 1303 : Ulysses Grant | Senior Sales Associate | South | 3 | ТХ |
| 2 37 | 064 1301 : Thomas Jefferson | Sales Associate I | Northeast | 2 | СТ |
| 7 | 0 | | 0 | | 10 |
| 1 | 0 | | 9 | | 10 |
| A ^B C Article | \checkmark 1 ² 3 # of units | . ▼ 1 | ² 3 Selling Price Per Unit | ▼ 1 ² 3 Profit | Margin 💌 |
| Stuffed Horse | | 120 | | 22 | 1590 |
| Stuffed Horse | | 144 | | 22 | 1908 |

- 1) The field "**Sales Order #**" has no changes.
- The field "Salesperson" is a merged field of the "Salesperson #" field and the "Salesperson" field. They are separated by a colon. The colon is referred to as a delimiter. Common delimiters are colons, commas, dashes, and semicolons.



Operation 15: Split Column – Separate One Column into Many Columns







| Select "Colon". | Split Column by Delimiter |
|--|---|
| | Specify the delimiter used to split the text column. |
| | Select or enter delimiter |
| | Colon 👻 |
| | Colon |
| | Comma |
| | Equals Sign |
| | Split Column by Delimiter |
| Verify that "Each occurrence of the Delimiter" is selected. | Specify the delimiter used to split the text column. |
| | Select or enter delimiter |
| | Colon 🔻 |
| | Split at |
| | O Left-most delimiter |
| | Right-most delimiter Each occurrence of the delimiter |
| | > Advanced options |
| | Quote Character |
| | ······································ |
| Click "OK" | Split using special characters |
| CIICK OIX. | Insert special character 💌 |
| | OK Cancel |

Two new fields are created from parsing the "Salesperson" field.

Operation 16: Rename Columns

To rename the column heading double click on "SalesPerson.1".

| | 1 ² 3 Sales Order # | ✓ 1 ² ₃ SalesPerson.1 | ▼ A ^B _C SalesPerson.2 | • |
|------|--------------------------------|---|---|---|
| Туре | "Salesperson #" and | press enter | | |
| | 1 ² 3 Sales Order # | ✓ 1 ² ₃ Salesperson # | ✓ A ^B C | |

In the same way rename "SalesPerson.2" to "Salesperson".

| 123 Sales Order # | ▼ 1 ² 3 SalesPerson # | ▼ A ^B _C SalesPerson | - |
|-----------------------|----------------------------------|---|---|
| 1 Control | | | |

After the split the field "SalesPerson" may have extra spaces. To trim the field and remove extra spaces from the beginning and ending of a string right click on "SalesPerson".

Select "Transform".

Select "Trim".

| Nyses (F Copy South South Northeast Northeast South Northeast Northeast South Northeast South Northeast South Northeast South Northeast Northeast South Northeast Northeast South Northeast Northeast South Northeast Nor | C Sales | Dorer | v Alla Titlo | - | - | A ^B C Region | |
|--|-----------|----------|--------------------------|-----|----------------------|-------------------------|--|
| homas Remove Northeast Nyses c Remove Other Columns Northeast Ohn Tyk Add Column From Examples Northeast Nyses c Remove Duplicate S Northeast Northeast South Northeast Nyses c Remove Errors South Northeast South Northeast Northeast Northeast Northeast Northeast South Northeast Northeast Northeast UPPERCASE Chaptalize Errors Transform Clean Sorver C Fill South Northeast Uplyot Columns XML Unplyot Other Columns XML | ilysses (| | Сору | _ | | South | |
| Jiysses C Remove Other Columns Northeast Duplicate Column South Jiysses C Add Column From Examples Remove Duplicates Northeast Jiysses C Remove Duplicates Remove Errors South Informas Change Type | homas. | × | Remove | | | Northeast | |
| ohn Tyk Duplicate Column South Jypases C Add Column From Examples Northeast Northeast Northeast Northeast Northeast South South Inomas Change Type Northeast Northeast South South Inomas Change Type Northeast Northeast South South Inomas Change Type Northeast South Transform Iowercase UPPERCASE Capitalize Each Word Soever C Split Column Clean Souver C Fill JSON Unplicot Other Columns XML | ilysses c | | Remove Other Columns | | | Northeast | |
| Jlyses C Add Column From Examples Northeast Beorge Remove Errors South homas Change Type Northeast homas Change Type Northeast homas L Replace Values ohn Tyle Replace Values Replace Errors Capitalize Each Word Trim Source C Forup By Fill Column C Clean Length Source C Homos XML Unpivot Columns XML | ohn Tyle | - | Duplicate Column | | | South | |
| ieorge \ Remove Duplicates Northeast Jhyses (Remove Errors South homas Change Type Northeast homas Replace Values ohn Tyk Replace Values Replace Errors Jupper Capitalize Each Word Trim Split Column Columns Unplot Columns Unplot Other Columns VML Unplot Other Columns | Jlysses (| E. | Add Column From Examples | | | Northeast | |
| Jkyses (Remove Errors South homas (Change Type () Northeast ohn Tyk Transform () Iowercase ohn Tyk Replace Values UPPERCASE ohn Tyk Split Column () Capitalize Each Word severg C Fill South homas 1 Uplot Columns () Upper () Upport Other Columns () XML | Seorge V | | Remove Duplicates | - 1 | | Northeast | |
| homas Change Type Northeast Ohor Tyk Replace Erors Split Column S Split Columns Split Columns SML Unprocesse Unprocesses Split Columns SML Unprocesses Split Columns | llysses (| | Remove Errors | | | South | |
| ohn Tyle Transform I lowercase UVPERCASE UVPERCASE Capitalize Each Word Sirvev C I Tim Clean Length Solve C I Fill Solve C I Fill Solve C I UVPERCASE Capitalize Each Word Sirvev C I I Solve C I Solve C I I Solve C I | homas. | | Change Type | | | Northeast | |
| homas 1.2 Replace Values UPPERCASE ohn Tyk Replace Errors Capitalize Each Word stover C Trim Trim Group By Clean Length homas Fill JSON Unpivot Columns XML | ohn Tyle | | Transform | | I | owercase | |
| ohn Tyl Replace Errors Capitalize Each Word Trim Trim Sorrer C Fill Split Column C Lean Serorge C Fill Split Columns XML Unpivot Columns XML | homas. | 1 | Replace Values | | L | IPPERCASE | |
| stover C Split Column Split Column Split Column Clean Length Length SoN Split Columns Unpivot Columns Mul | ohn Tyle | | Replace Errors | | Capitalize Each Word | | |
| seorge () split Column , Clean srover C Fill , JSON homas Unpivot Columns , XML | Srover C | 6 | Colla Column | | 1 | rim | |
| arover C Forup By Length homas Unpivot Columns Unpivot Other Columns | Seorge \ | nn | Spirt Column | 1 | Clean | | |
| homas Hill ISON JSON XML Unpivot Columns XML Unpivot Other Columns | Srover C | - | Group By | | L | ength | |
| Thomas Unpivot Columns XML Unpivot Other Columns | homas | | Fill | | JSON | | |
| Thomas Unpivot Other Columns | nomas. | W | Unpivot Columns | | X | ML | |
| | homas | | Unpivot Other Columns | | - | WCK. | |

Click on the "drop-down" next to "Salesperson".

| Code | Salesperson |
|------|------------------|
| 1301 | Thomas Jefferson |
| 1302 | Grover Cleveland |

1303 Ulysses Grant

1304 Martin Van Buren

1305 George Washington

1306 John Tyler

"Thomass" must be replaced with "Thomas".

The "Salesperson" field can only contain one of the six salespersons. Browse the data in the "Salesperson" field to verify that all the data is correct. Make any changes that are required.

| | 1 ² 3 Sales Order # | .T 1 | 1 ² 3 Salesperson # 🔹 🗖 🖉 Salesperson 💌 |
|----|--------------------------------|-------------|--|
| 1 | 35 | ≜ ↓ | Sort Ascending |
| 2 | 35 | Z↓ | Sort Descending |
| 3 | 35 | | Clear Sort |
| 4 | 35 | - | Clear Filter |
| 5 | 35 | × | |
| 6 | 35 | | Remove Empty |
| 7 | 35 | | Text Filters |
| 8 | 35 | | Soarch |
| 9 | 35 | | Seuch |
| 10 | 35 | | ✓ (Select All) |
| 11 | 35 | | George Washington |
| 12 | 35 | | Grover Cleveland |
| 13 | 35 | | ✓ John Tyler |
| 14 | 35 | | Martin Van Buren |
| 15 | 35 | | ✓ Thomas Jefferson |
| 16 | 35 | | ✓ Thomass lefterson |
| 17 | 35 | | |
| 18 | 35 | | OK Cancel |
| 10 | 20 | | |

Select Cancel.

CSA Power BI Append the Second Stream

| File | Home | Trans | sform | Add Column | View | Tools | Help | | | | | | | | |
|------------------|-------------------|--------------------|---------------|-------------------------|------------------------|---|---|---------------------|-----------------------|------------------------------|---------|-------------------|-------------|--|--------------|
| Close & Apply | New Source • S | Recent ources • | Enter Data | Data source settings | Manage Parameters • | Refresh Preview | Properties | Choose Columns • | Remove Columns * | Keep Remove Rows • Rows • | A Z↓ | Split Column • | Group By | Data Type: Text • Use First Row () 2 Replace Values | as Headers 🔹 |
| Sele | ct Re | plac | ce V | alues | Parameters | eplace | Query • Values • value with another i | Manage | Columns ted column | S. | Sort | | | Transform | × |
| | | | | | Va Ti Re Ti | lue To Fin homass place With homas | d n options | | | | | 1 | ОК | Cancel | |

Value to find "Thomass" Replace with "Thomas"

Select OK.

Click on the "drop-down" next to "Salesperson".

| ext to "Salesperson". | Az↓ | Sort Ascending |
|-----------------------|-----------------------|--------------------|
| | Ă↑ | Sort Descending |
| | | Clear Sort |
| | \mathbb{T}_{\times} | Clear Filter |
| | | Remove Empty |
| | | Text Filters |
| | | Search |
| | | ✓ (Select All) |
| | | George Washington |
| | | ✓ Grover Cleveland |
| | | ✓ John Tyler |
| | | Martin Van Buren |
| | | Thomas Jefferson |
| | | ✓ Ulysses Grant |
| | | OK Cancel |

Select Cancel.

3) The field "Title" has no changes.

4) The field "**Region**" has no changes, we must verify that all the names have been entered correctly.

The "Region" field can only contain one of the four regions. Browse the data in the "Region" field to verify that all the data is correct. Make any changes that are required.

| Code | Region |
|------|-----------|
| 1 | Midwest |
| 2 | Northeast |
| 3 | South |
| 4 | West |

| Click on the "drop-down" | ▼ A ^B _C Title ▼ | AB _C Region |
|--------------------------|---------------------------------------|------------------------|
| next to "Region". | A Sort Ascending | |
| | Z↓ Sort Descending | |
| | Clear Sort | |
| | - 🍢 Clear Filter | |
| | Remove Empty | |
| | Text Filters | • |
| | Search | |
| | ✓ (Select All) | |
| | ✓ Midwest | |
| | Northeast | |
| | South | |
| | ✓ West | |
| | List may be incomplete | . Load more |
| | | OK Cancel |

No changes must be made, select Cancel.

- 5) The field "**Region #**" has no changes.
- 6) The field "**State**" has no changes.
- 7) The field "**Article**" has to be renamed "**Product**" and we must verify that all the names have been entered correctly.

Double click on "Article", type "Product" and press the enter key. In the original Excel file, The Cuddly Stuffed Animals company provided the only acceptable values for "Product".

| Product ID | Product |
|------------|------------------|
| 101 | Stuffed Penguin |
| 102 | Stuffed Horse |
| 103 | Stuffed Unicorn |
| 104 | Stuffed Giraffe |
| 105 | Stuffed Panda |
| 106 | Stuffed Elephant |

Click on the "drop-down" next to "Product".

The "Product" field can only contain one of the six products. Browse the data in the "Product" field to verify that all the data is correct. Make any changes that are required.



CSA Power BI Append the Second Stream

| File | Home | Transform | Add Column | View | Tools Help | | | | | | |
|--------------------|--------------------|-------------------------------|-------------------------|------------------------|-------------------------------|--------------------------------------|------------------------------|---------------|----------------------------|---|------------|
| Close & Apply • | New Source ▼ Se | Recent Enter Durces • Data | Data source settings | Manage Parameters • | Refresh Preview • Manage • | Choose Remove Columns * Columns * | Keep Remove Rows • Rows • | A Z↓ X↓ | Split Group Column • By | Data Type: Text ▼ Use First Row as Headers 1 →2 Replace Values | s • |
| Close | Ne | w Query | Data Sources | Parameters | Query | Manage Columns | Reduce Rows | Sort | | Transform | |

With the field "Product" highlighted, select "Replace Values".

| | n# ▼ A ^B _C State | - | A ^B C Product | 1 ² 3 # of units | 123 Selling Price Per U |
|---|--|-------------|--------------------------------------|-----------------------------|-------------------------|
| | 3 TX | | Stuffed Horse | 120 | |
| | 2 CT | | Stuffed Horse | 144 | |
| | 2 CT | | Stuffed Horse | 96 | |
| Value to find "Pink Giraffe". Replace with "Giraffe". | Replace Values Replace one value with another Value To Find Pink Giraffe Replace With Giraffe > Advanced options | in the sele | ected columns. | ок | Cancel |
| Select OK. | | | 6 h r | | |
| The second se | 1 | 2↓ | Sort Ascending | | |
| To confirm, click on the "drop" | -down" next to | Â↓ | Sort Descending | | |
| "Product". | | | Clear Sort | | |
| | | Tx | Clear Filter | | |
| | | | Remove Empty | | |
| | | | Text Filters | | Þ |
| | | | Search | | |
| | | | (Select All) | | |
| | | | Stuffed Elephant | | |
| | | | Stuffed Giraffe | | |
| | | | ✓ Stuffed Horse | | |
| | | | Stuffed Panda | | |
| | | | ✓ Stuffed Penguin | | |
| | | | Stuffed Unicorn | | |
| Select Cancel. | | | 🚹 List may be incor | nplete. Loa | ad more |
| | | | | ОК | Cancel |

- 8) The field "**# of units**" has no changes.
- 9) The field "**Selling Price Per Unit**" does not exist in the "January Sales Data" stream of data. Instead, there is a field "Sales", the product of the "# of units" and the "Selling Price Per Unit".

Operation 17: Create Calculated Field

Select "Custom Column" from the "General" data group under the "Add Column" tab.



New column name, "Sales".

Custom Column

Add a column that is computed from the other columns.

Select "# of units" from the available list, double click or hit insert.

Type, "*" select "Selling Price Per Unit" from the available list double click or hit insert.



| Custom column formula 🕦 | Available columns |
|---|------------------------|
| <pre>= [#"# of units"]*[Selling Price Per Unit]</pre> | Region |
| | Region # |
| | State |
| | Product |
| | # of units |
| | Selling Price Per Unit |
| | Profit Margin |
| | << Insert |
| Learn about Power Query formulas | L |
| can about tower eacry tornalas | |
| ✓ No syntax errors have been detected. | ОК Cancel |

Select OK.

The type of field must be changed to a decimal. Click on the $\frac{12}{12}$ in the left-hand corner of the field "Sales".

Select "\$ Fixed decimal number".

| \$ Sales | Ψ. |
|-------------|----------|
| | 2,640.00 |
| | 3,168.00 |
| | 2,112.00 |
| | 1,320.00 |
| | 2,760.00 |
| | 1,056.00 |
| | 1,260.00 |
| | 2,268.00 |
| | 3,120.00 |
| | 3,696.00 |

Mark Friedman University of Miami

| ABC 123 Sales | Υ. |
|------------------|------|
| | 2640 |
| | 3168 |
| | 2112 |
| | 1320 |
| | 2760 |
| | 1056 |
| | 1260 |
| | 2268 |
| | |

10)The field "**Profit Margin**" must be changed to a decimal Click on the $\frac{12}{3}$ in the left-hand corner of the field "Profit Margin".

Select "\$ Fixed decimal number".

| \$Р | rofit Margin | ¥ |
|-----|--------------|----------|
| | | 1,590.00 |
| | | 1,908.00 |
| | | 1,272.00 |
| | | 795.00 |
| | | 1,560.00 |
| | | 636.00 |
| | | 675 00 |

Operation 18: Append the Two Streams

Select "Append Queries" from the "Combine" group under the "Home" tab.

| File | Home | Trans | form | Add Column | View | Tools Help | | | | | | | | | |
|--------------------|-----------------|---------------------|---------------|-------------------------|------------------------|---------------------------------|---------------------|---------------------|--------------------------|---------|-------|-------------|---------------------------------|-----------------|---|
| | | | | | | Properties | | $\mathbf{\times}$ | | A Z↓ | ſľh | 2 | Data Type: Fixed decimal number | Merge Queries - | |
| Close & Apply 👻 | New Source • | Recent Sources 👻 | Enter Data | Data source settings | Manage Parameters * | Refresh Preview • 🛄 Manage • | Choose Columns * | Remove Columns 👻 | Keep Remo Rows • Rows | re • | Split | Group By | Seplace Values | U Combine Files | 2 |
| Close | N | lew Query | | Data Sources | Parameters | Query | Manage | Colum | Reduce Rows | Sort | | | Transform | Combine | |
| | | | | | | | | | | | | | | | |

Select "Append Queries".

Select "Append Queries as New".

| File | Home | Transform | Add Column | View | Tools Help | | | | | | | |
|---------|-------------|---------------|--------------|--------------|---|-------------------|---------------|----------|-------------|-----------------------------------|-------------------|---------|
| Close & | New | Recent Enter | Data source | Manage | Refresh | Choose Remove | Keep Remove | A↓ Z↓ | Split Group | Data Type: Fixed decimal number • | Merge Queries • | Text Ar |
| Apply - | Source * So | ources 🔻 Data | settings | Parameters * | Preview • • • • • • • • • • • • • • • • • • • | Columns Columns | Rows * Rows * | | Column • By | G 2 Replace Values | | |
| Close | Ne | w Query | Data Sources | Parameters | Query | Manage Columns | Reduce Rows | Sort | | Transform | Append Queries as | 5 New |

In the pop-up select "January Sales Data" as the "First table".

Select "February-December Sales data" as the "Second table".

Click "OK".

| Append | | |
|---|---------------------------|--|
| Concatenate rows from two ta | oles into a single table. | |
| • Two tables • O Three or more | tables | |
| | | |
| First table | | |
| First table January Sales Data | • | |
| First table January Sales Data Second table | v | |



Operation 19: Create a "Table".

Click on the Table icon under the Visualization section to add a table.



Click on the stothe left of Append 1 to expand the fields.

The order that you select the fields is used to determine the order in which the fields are displayed in the table. Click on the box next to each field in the order that you want the fields to be displayed.

- 1. Product
- 2. # of units
- 3. Sales
- 4. Profit Margin

Size the table

| Product | # of units | Sales | Profit Margin |
|------------------|------------|--------------|---------------|
| Stuffed Elephant | 50508 | \$1,262,700 | \$744,993 |
| Stuffed Giraffe | 104772 | \$2,200,212 | \$1,178,685 |
| Stuffed Horse | 150504 | \$3,311,088 | \$1,994,178 |
| Stuffed Panda | 93924 | \$2,160,252 | \$1,221,012 |
| Stuffed Penguin | 58752 | \$1,175,040 | \$646,272 |
| Stuffed Unicorn | 48900 | \$1,173,600 | \$647,925 |
| Total | 507360 | \$11,282,892 | \$6,433,065 |
| _ | | _ | |
| | | | |

| Fields | | | | | | | | | |
|--|--|--|--|--|--|--|--|--|--|
| | | | | | | | | | |
| ∨⊞ Append1 | | | | | | | | | |
| $\Box \sum$ # of units | | | | | | | | | |
| Product | | | | | | | | | |
| Profit Margin | | | | | | | | | |
| Region | | | | | | | | | |
| □ ∑ Region # | | | | | | | | | |
| $\Box \sum$ Sales | | | | | | | | | |
| $\Box \sum$ Sales Order # | | | | | | | | | |
| Salesperson | | | | | | | | | |
| □ ∑ Salesperson # | | | | | | | | | |
| \Box \sum Selling Price Pe | | | | | | | | | |
| State | | | | | | | | | |
| Title | | | | | | | | | |
| > I February-December S | | | | | | | | | |
| ${\scriptstyle \bigvee} \boxplus$ January Sales Data | | | | | | | | | |
| $\Box \sum$ # of units | | | | | | | | | |

Operation 20: Exporting data to Excel

Select the table you want to export and notice that you get More Options indicated by 3 dots (...) on the top or bottom right of the table.



Select the name of the file "Report by Product.csv".

| | 🧧 Save As | | | | × |
|----------------------------|--|---|-----------------------------|--------------------|--------------|
| | $\leftarrow \rightarrow \checkmark \uparrow$ | 📜 « Local Disk (C:) > Sample - Power I | BI ~ ひ | | e - Power Bl |
| | Organize 🝷 | New folder | | | ::: • ? |
| | Name | e | Date modified | Туре | Size |
| | | leport by Product.csv | 2/11/2022 5:35 PM | Microsoft Excel Co | 1 KB |
| | File nar | me: Report by Product.csv | | | ~ |
| | Save as ty | pe: CSV File (*.csv) | | | ~ |
| | Hide Folders | | | Save | Cancel |
| Select Save | C | Confirm Save As | | | |
| Confirm the save. | 4 | Report by Product.csv Do you want to repla | / already exists. ce it? | | |
| | | | Yes | No | |
| Open the original excel fi | le | | | | |

| Select the file. | ^ N | ame | Date modified | Туре | Size |
|------------------|----------|--------------------------|---------------------|---------------------------------|---------|
| | Ę | Stuffed Animals.ETL.Demo | 11/25/2021 10:21 AM | Microsoft Excel W | 857 |
| | | | | | |
| | | | | | |
| | | | | | |
| Select "Open". | | | | | |
| | | | | | |
| | ~ < | | | | > |
| | le name: | Stuffed Animals.ETL.Demo | ~ | Excel Files (*.xls;*.xlsx;*.xls | im;*: ~ |
| | | | T | Open Car | ncel |

Navigate in file manager and double click on the "Report by Product.csv" file.

| | B1 | 1 • | \times | f _x | | | |
|----------------------|-------|------------------|------------|----------------|---------------|----|-------------------|
| | | А | В | С | D | Е | F |
| | 1 | Product | # of units | Sales | Profit Margin | | |
| | 2 | Stuffed Elephant | 50508 | \$1,262,700 | \$744,993 | | |
| | 3 | Stuffed Giraffe | 104772 | \$2,200,212 | \$1,178,685 | | |
| | 4 | Stuffed Horse | 150504 | \$3,311,088 | \$1,994,178 | | |
| | 5 | Stuffed Panda | 93924 | \$2,160,252 | \$1,221,012 | | |
| | 6 | Stuffed Penguin | 58752 | \$1,175,040 | \$646,272 | | |
| | 7 | Stuffed Unicorn | 48900 | \$1,173,600 | \$647,925 | | Insert |
| | 8 | | | | | | Delete |
| | 9 | | | | | | |
| | 10 | | | | | E | <u>R</u> ename |
| | 11 | | | | | | Move or Copy |
| | 13 | | | | | :0 | <u>V</u> iew Code |
| | | Repor | t by Prod | uct 🕂 🕂 | | | Protect Sheet |
| | | | | | | | <u>T</u> ab Color |
| this tab to the orig | ginal | Excel by rig | ght clicl | king on t | he tab | | <u>H</u> ide |
| rt by Product and | sele | ctina "Move | or Cor | o∨". | | | |

| Select the name of the original file. | Move or Copy | ? | × | | | |
|---|---|----------|--------|--|--|--|
| | Move selected sheets <u>T</u> o book: | | | | | |
| | Report by Product.csv | | \sim | | | |
| | (new book) | | ~ | | | |
| | Stuffed Animals.ETL.Demo.xlsx Report by Product.csv | | | | | |
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| | Move or Copy ? | \times | | | | |
| | Move selected sheets <u>T</u> o book: | | | | | |
| | Stuffed Animals.ETL.Demo.xlsx | ~ | | | | |
| | Before sheet: | | | | | |
| | February-December Sales Data Products Salesperson | ^ | | | | |
| Scroll till the end and click on "(move to end)". | Region Jan Report by Product Report by Product | | | | | |
| | Vear Report by Broduct (move to end) | ~ | | | | |
| | <u>C</u> reate a copy | | | | | |
| Then click "OK". | ОК | Cancel | | | | |

Rename the tab as "Annual Report by Product", format the sheet, save, and close the Excel file.

| | А | В | С | | D | E | | | | |
|---|--------------------------|------------|---------|--------|---------------|---|--|--|--|--|
| 1 | Product | # of units | Sale | s | Profit Margin | | | | | |
| 2 | Stuffed Elephant | 50,508 | \$1,2 | 52,700 | \$744,993 | | | | | |
| 3 | Stuffed Giraffe | 104,772 | \$2,20 | 00,212 | \$1,178,685 | | | | | |
| 4 | Stuffed Horse | 150,504 | \$3,33 | 11,088 | \$1,994,178 | | | | | |
| 5 | Stuffed Panda | 93,924 | \$2,1 | 60,252 | \$1,221,012 | | | | | |
| 6 | Stuffed Penguin | 58,752 | \$1,1 | 75,040 | \$646,272 | | | | | |
| 7 | Stuffed Unicorn | 48,900 | \$1,1 | 73,600 | \$647,925 | | | | | |
| 8 | Total | 507,360 | \$ 11,2 | 82,892 | \$ 6,433,065 | | | | | |
| 9 | | | | | | | | | | |
| | Annual Report by Product | | | | | | | | | |

Operation 21: Save the "Flow and Data"

Select "File".

| <mark>@</mark> 🔒 ' | 🛺 📔 🦐 🕏 🔻 🛛 ver 1 - Power BI Desktop | | | | | | | | | | | |
|----------------------|--------------------------------------|---------------|---------------------|---------------|-------------------|---------|---------------|---------------|-------------------|---------|----------|-------------------|
| File | Home | View | Modeling | I | Help | | | | | | | |
| Paste | K Cut Copy ✓ Format Painter | Get Data ▼ | Recent Sources • | Enter Data | Edit Queries - | Refresh | New Page • | New Visual | Ask A Question | Buttons | Text box | From Marketpla |
| C | lipboard | | E | xternal o | lata | | | | Inse | rt | | Custor |

Select the name of the file.

| Save As | | | × |
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| File name: Cuddly Stuffed Animals | | | ~ |
| Save as type: Power BI file (*.pbix) | | | ~ |
| ∧ Hide Folders | | Save | Cancel |

Select Save.

Close Power Bl.