Power Query Supplemental Exercise

Data from the Web (with DEMO of merge)

1) In Google, SEARCH: “North Carolina Household Income by County”
   a. Click URL starting www.USA.com, highlight & copy URL

   ![Image of USA.com website]

   b. In Excel, select the Power Query tab and click ‘From Web’, paste URL, and click “Ok”.

   ![Image of Excel Power Query From Web]

   c. In the Navigator pane, select the ‘North Carolina Median Household Income’ table, and click ‘Edit’. A sample of the data will open in a Query Editor window.

   ![Image of Excel Navigator with selected table]
d. In Query Editor, highlight ‘County/Population’ column and select ‘Split Column by Delimiter’ to split County from Population at the forward-slash, using the Custom delimiter box.

![Image of Query Editor with Split Column by Delimiter tool highlighted]

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e. Split ‘County’ into County and State; and remove the resulting State column by right-clicking on the column and selecting ‘Remove’.

![Image of Query Editor with Remove State column highlighted]

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f. Rename the split columns: Highlight column, right-click and select ‘Rename’

![Image of Query Editor with Rename column tool highlighted]
g. Relocate the ‘County’ column to beginning, using the ‘Move’ function on the ‘Transform’ ribbon (or alternatively, you can click and drag the column to move it)

[Image of Excel ribbon with Move function highlighted]

h. Click ‘Close and Load’ (the data will be added to the data model)

[Image of Excel ribbon with Close & Load button highlighted]

2) In Google, SEARCH “North Carolina race by county”
   a. Click URL starting www.osbm.state.nc.us, highlight & copy URL

   [Image of URL]

   North Carolina County/State Race Data
   (to open/download as Excel Spreadsheet, click here)

   Race Totals and Percentages from 1990 Census MARS file

<table>
<thead>
<tr>
<th>County</th>
<th>Total</th>
<th>% White of Total</th>
<th>Other</th>
<th>% Black of Other/Asian</th>
<th>% Asian</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alamance</td>
<td>108,213</td>
<td>86.34%</td>
<td>88.01%</td>
<td>21.02%</td>
<td>5.04%</td>
</tr>
<tr>
<td>Alexander</td>
<td>27,544</td>
<td>25.75%</td>
<td>97.31%</td>
<td>1.87%</td>
<td>0.32%</td>
</tr>
</tbody>
</table>

   b. In Excel, select ‘From Web’, paste URL, select Table 0, and click ‘Edit’

   [Image of Excel spreadsheet with Table 0]

   i. Use the ‘Remove Rows’ function on the HOME ribbon to REMOVE the top row
ii. **Use First Row as Headers**

![Use First Row as Headers](image)

<table>
<thead>
<tr>
<th>COUNTY</th>
<th>Total</th>
<th>White</th>
<th>%White</th>
<th>Other</th>
<th>%Black of Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALAMO</td>
<td>108,213</td>
<td>86,584</td>
<td>80.01</td>
<td>21,629</td>
<td>20.06</td>
</tr>
<tr>
<td>ALEXANDER</td>
<td>27,544</td>
<td>1,797</td>
<td>6.51</td>
<td>24,737</td>
<td>89.49</td>
</tr>
<tr>
<td>ALLEN</td>
<td>5,590</td>
<td>1,399</td>
<td>25.00</td>
<td>3,516</td>
<td>63.72</td>
</tr>
</tbody>
</table>

iii. **RENAME** ‘of Total’ to ‘%White’ and ‘of Other’ to ‘%Black of Other’

iv. Click ‘Add Custom Column’ (name: % Black), and create a custom formula (using the available columns showing to the right of the formula box) to calculate the percent Black of the total county population. Click ‘OK’.

![Add Custom Column](image)

Learn about Power Query formulas

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Available columns:
- COUNTY
- Total
- %White
- %Black
- %Of Other
- %Of Other

Custom column formula:
%Black = %Black of Other
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v. Why do you think an ‘Error’ returned?

![Error](image)
vi. Remove ‘Added Custom’ in APPLIED STEPS box of Query Settings

![Image of Query Settings with 'Added Custom' highlighted]

vii. On the Transform ribbon, change Data Type from Text to Whole Numbers for ‘Total’ and ‘Black’ columns

![Image of Data Type options with 'Whole Numbers' selected]

viii. Repeat Insert custom column (name: %Black); and use the ‘Move’ function on the TRANSFORM ribbon to move the ‘%Black’ column next to the ‘%White’ column.

![Image of Transform ribbon with 'Move' button selected]

c. REMOVE original ‘Black’ column (does not impact calculated %Black column), and ‘%Black of Other’ column. Click ‘Close and Load’.

d. Change %Black to percentage formatting by right-clicking on the column, selecting ‘Format Cells’, and then ‘Number’ and ‘Percentage’.

![Image of Format Cells with percentage formatting selected]
3) Re-open the Query Editor by clicking ‘Edit Query’ on the ‘Query’ ribbon.

a. Repeat Add Custom Column to insert a ‘% Asian’ (of total) column, move it next to the ‘%Black’ column, and remove the ‘Indian’ and ‘Asian’ columns. Click ‘Close and Load’.

4) Perform a merge of these two tables using the common ‘County’ column from each. A merge can be performed in the Excel workbook from the ‘Query’ ribbon, or by right clicking a table in the ‘Workbook Queries’ pane, or from the ‘Home’ ribbon of the Query Editor.

a. Merge the ‘North Carolina Median Household Income’ table with ‘Table 0’ (Race by County)

i. Why does the merge display 0 (zero) matching rows?
b. Select ‘Table 0’, click ‘Edit’ to enter the Query Editor, and either right click or use the TRANSFORM ribbon to change the text format to ‘Capitalize Each Word’ (in order to match the case of the county column in the household income table).

c. Repeat the merge as described above (note that all 100 rows were matched). Click OK.

d. Click the icon next to the header text ‘NewColumn’ to choose which columns to pull into the merge from Table 0. Select ‘Total’, ‘%White’ and ‘%Black’. Click OK.

i. The merged table displays the new columns added from Table 0 (rename, if desired).
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