



# Working with Data in Excel Computer Training

*Tips, Tricks, and Shortcuts*

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## Overview

- **Purpose – To explore some of the ways to manipulate business and census data using Excel**
- **Prerequisites:**
  - Working knowledge of Excel
  - Specific skill examples:
    - How to move around Excel
    - How to enter a formula
    - How to copy, paste, and save data.
    - How to create multiple sheets in a single Excel workbook



## Agenda

- **Section 1 – How do clean up data**
  - Sorting tricks and the Filter tool
  - Building and working on the diagonal
- **Section 2 – Functions**
  - Transpose and Rank Functions
- **Section 3 – Displaying the Results**
  - Simple charts
  - Linking to Word and PowerPoint
- **Resources**



## Section One – Cleaning up the data

- **Open the “Excel-TipsAndTricksCrsData.xls” file**
- **Select the “Data Cleanup” Tab.**
- **Delete Header and Title**
- **Move Legend to separate sheet**
  - Use “Ctrl-End” to get to bottom of sheet.
  - Use “Ctrl-Home” to return to top of sheet



## Sample of Raw Data

GeoFips	GeoName	LineCode	Description	2013
31000	Nebraska		Place of re	
31000	Nebraska	10	Personal in	88113758
31000	Nebraska		Derivation	
31000	Nebraska	45	Net earni	59031726
31000	Nebraska	50	Personal	12276744
31000	Nebraska	60	Income	1120692
31000	Nebraska	70	Unempl	152612
31000	Nebraska	80	Retirem	11003440
31000	Nebraska	90	Dividends	16805288
31000	Nebraska	100	Populatio	1868516
31000	Nebraska		Per capita	
31000	Nebraska	110	Per capita	47157
31000	Nebraska	120	Per capita	31593
31000	Nebraska	130	Per capita	6570
31000	Nebraska	140	Per cap	600
31000	Nebraska	150	Per cap	82



## Section One – Cleaning up the Original Data (2)

- **Delete unneeded columns (Use “Ctrl” key to highlight unconnected columns)**
- **Rename “GeoName” to State/City, “2013” to “Value”**
- **Sorting Tip**
  - Build a temporary sort column to recover from mistakes



## Section One – Cleaning up the Original Data (3)

- **Data Manipulation**

- Only interested in “Personal Income”, “Per capita incomes”, “Total FT and PT Employment”, and “Average earnings per job”.
- Only interested in “Nebraska”, and “Douglas”, “Dodge”, “Sarpy”, “Saunders”, and “Washington” counties.
- Place cursor in header row.
- Select “Filter”
- Select “State/City” heading, and check only the six categories requested.
- Click “Ok”
- Select “Description” heading and check only the four categories requested
- Click “OK



# Section One – Cleaning up the Original Data (4)

*Should look something like the sheet below*

State/City	Description	Value					1
Nebraska	Personal income	88113758					3
Nebraska	Per capita incomes (dollars)						12
Nebraska	Total full-time and part-time employment (number of jobs)	1257710					29
Nebraska	Average earnings per job (dollars)	53194					34
Dodge	Personal income	1567224					948
Dodge	Per capita incomes (dollars)						957
Dodge	Total full-time and part-time employment (number of jobs)	22194					974
Dodge	Average earnings per job (dollars)	47076					979
Douglas	Personal income	26862606					983
Douglas	Per capita incomes (dollars)						992
Douglas	Total full-time and part-time employment (number of jobs)	411482					1009
Douglas	Average earnings per job (dollars)	59873					1014
Sarpy	Personal income	7443253					2698
Sarpy	Per capita incomes (dollars)						2707
Sarpy	Total full-time and part-time employment (number of jobs)	83088					2724
Sarpy	Average earnings per job (dollars)	51295					2729
Saunders	Personal income	1005049					2733
Saunders	Per capita incomes (dollars)						2742
Saunders	Total full-time and part-time employment (number of jobs)	8113					2759
Saunders	Average earnings per job (dollars)	46116					2764
Washington	Personal income	1014549					3118
Washington	Per capita incomes (dollars)						3127
Washington	Total full-time and part-time employment (number of jobs)	11488					3144
Washington	Average earnings per job (dollars)	58309					3149





## Section 2 - Using Functions (Sort Feature)

- **Sort by Description, then by “1” to get items in Description by State/County order.**
- **Set up “recovery sort” sequence 1-6.**
- **Delete “Per Capita” (Not Needed).**
- **Build Table using Copy and Paste**
  - **Create Headers**
  - **Copy Columns**
  - **Work on the diagonal**



## Section 2 - Using Functions

- **Tip - Build on the diagonal this maintains the row and column widths and data.**

State/City	Description	Value			Work	1				
Nebraska	Average earnings per job (dollars)	53194			1	34				
Dodge	Average earnings per job (dollars)	47076			2	979				
Douglas	Average earnings per job (dollars)	59873			3	1014				
Sarpy	Average earnings per job (dollars)	51295			4	2729				
Saunders	Average earnings per job (dollars)	46116			5	2764				
Washington	Average earnings per job (dollars)	58309			6	3149				
Nebraska	Per capita incomes (dollars)				1	12				
Dodge	Per capita incomes (dollars)				2	957				
Douglas	Per capita incomes (dollars)				3	992				
Sarpy	Per capita incomes (dollars)				4	2707				
Saunders	Per capita incomes (dollars)				5	2742				
Washington	Per capita incomes (dollars)				6	3127				
Nebraska	Personal income	88113758			1	3				
Dodge	Personal income	1567224			2	948				
Douglas	Personal income	26862606			3	983				
Sarpy	Personal income	7443253			4	2698				
Saunders	Personal income	1005049			5	2733				
Washington	Personal income	1014549			6	3118				
Nebraska	Total full-time and part-time employment (number of jobs)	1257710			1	29				
Dodge	Total full-time and part-time employment (number of jobs)	22194			2	974				
Douglas	Total full-time and part-time employment (number of jobs)	411482			3	1009				
Sarpy	Total full-time and part-time employment (number of jobs)	83088			4	2724				
Saunders	Total full-time and part-time employment (number of jobs)	8113			5	2759				
Washington	Total full-time and part-time employment (number of jobs)	11488			6	3144				
							<b>State/City</b>	<b>Personal inc.</b>	<b>Total FT/PT</b>	<b>Ave. Earnings</b>
							Nebraska	88,113,758	1,257,710	53,194
							Dodge	1,567,224	22,194	47,076
							Douglas	26,862,606	411,482	59,873
							Sarpy	7,443,253	83,088	51,295
							Saunders	1,005,049	8,113	46,116
							Washington	1,014,549	11,488	58,309
							By County			



## Section 2 - Using The Transpose Function

- **The Hard Way (but you may need it)**

- **Note:**

- Highlight receiving array
      - Note - Must be the same number of rows and columns, just flipped.
    - Select “Insert Functions”
    - Search for “Transposed” and select.
    - Highlight the sending array.
    - This is an array, so use the “Cntl-Shift-Enter” keys when finished.

- **The Easy Way**

- **Copy, then use the “Transpose” option under “Paste Special”**



## Section 2 - Using the “Rank” Function

- **Ranks the item in the array of items.**
- **Format: =Rank(Cell, Range)**
- **Then hit F4 to anchor the range**
- **Then Copy down.**



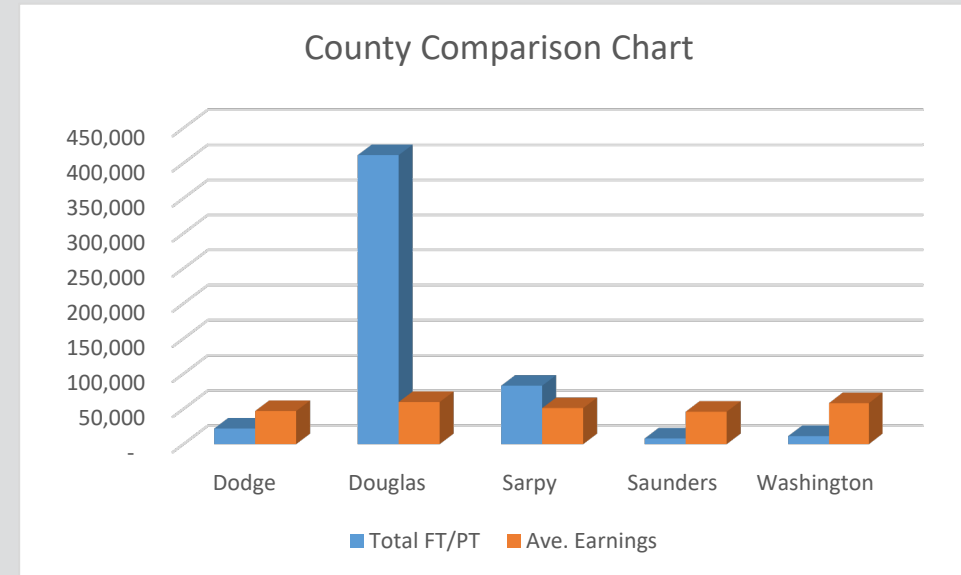
## Section 3 - Displaying and Linking the Results

- **Building a simple bar chart**
  - Delete the Ranks, not needed
  - Remember, the array is linked to the original table it was created from.
  - Remember, leave off the State of Nebraska row.
  - Holding the Cntl key down, highlight header row, then the county data.
    - Only Total FT/PT and Ave. Earnings
  - Select “Insert” and then the Column chart option



# Data and Chart Example

State/City	Personal inc.	Total FT/PT	Ave. Earnings
Nebraska	88,113,758	1,257,710	53,194
Dodge	1,567,224	22,194	47,076
Douglas	26,862,606	411,482	59,873
Sarpy	7,443,253	83,088	51,295
Saunders	1,005,049	8,113	46,116
Washington	1,014,549	11,488	58,309
By County			





## Section 3 – How to Paste a Chart to Word

- **Make sure Word is Open**
- **Select the Chart, and Copy it to the Clip Board**
- **Select Paste**
- **Select to keep source formatting or keep destination formatting**



## Section 3 – How to Paste Link a Chart to Word

- **Same as Copy, but it links to the spreadsheet.**
- **When you change the sheet, it changes the sheet.**
- **Generally the data refresh is automatic.**
- **Note – best to keep the two files in the same directory so the system can find them.**





## Pasting a chart to PowerPoint

- **Open PowerPoint**
- **Select a new slide.**
- **Highlight the chart.**
- **Copy the chart to the clipboard**
- **Paste into slide**
  - General paste option does not link data
  - Paste and link does



## Sources of Excel information

- **YouTube Videos**

- <https://www.youtube.com/user/learnexcelfunctions>
- <https://www.youtube.com/watch?v=mh3Lv6rf6zE>

- **Books**

- Excel 2013 For Dummies
- Step By Step – Microsoft Excel
- From Que Publishing: <http://www.quepublishing.com/promotions/excel-resource-center-from-que-publishing-139834>