

# Excel for Data Analysis I

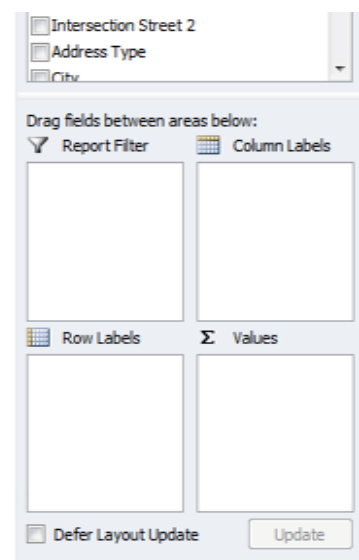
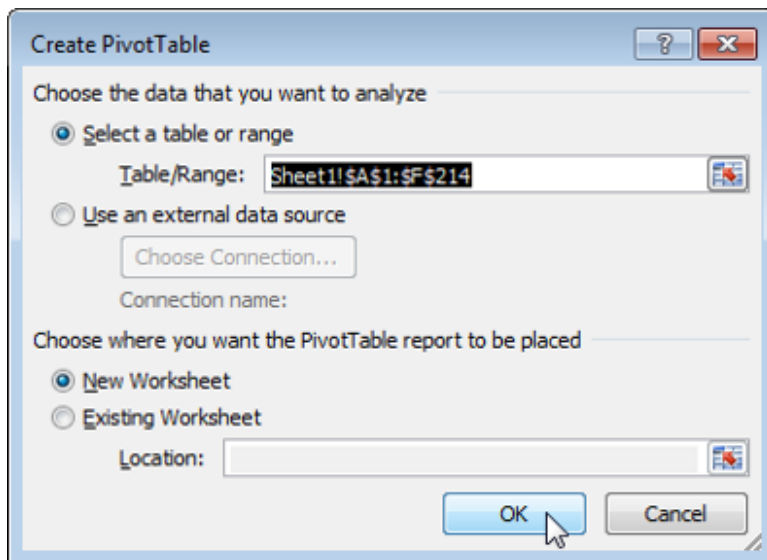
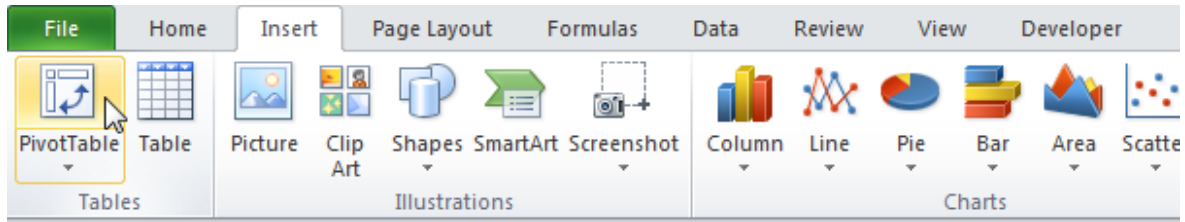
Follow along at: <http://bit.ly/excel-analysis-i>

## Key Questions for the Morning

- Benefits of Excel?
- Drawbacks of Excel?
- Keyboard Shortcuts
  - **Ctrl + arrow key** - Go to the end of the text in that direction
  - **Ctrl + c** - Copy the selection to clipboard
  - **Ctrl + v** - Paste clipboard contents to the cell(s)
- The Value of Data
- What is Analysis?


# Key Data Tasks

## PivotTables

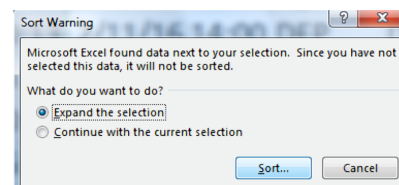
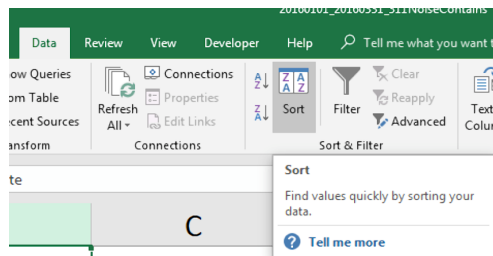


## Sorting

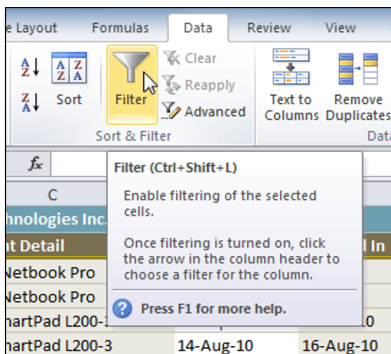
|   | A          | B             | C             |
|---|------------|---------------|---------------|
| 1 | Unique Key | Created Date  | Closed Date   |
| 2 | 32576232   | 2/1/16 10:13  | 2/11/16 14:00 |
| 3 | 32884992   | 3/11/16 13:48 | 3/12/16 8:00  |
| 4 | 32445685   | 1/18/16 10:56 | 1/20/16 8:00  |
| 5 | 32816604   | 3/2/16 15:17  | 3/3/16 8:00   |
| 6 | 32480740   | 1/22/16 10:19 | 1/24/16 20:00 |
| 7 | 32518960   | 1/25/16 7:35  | 1/28/16 15:45 |



|   | A          | B            | C            |
|---|------------|--------------|--------------|
| 1 | Unique Key | Created Date | Closed Date  |
| 2 | 32305299   | 1/1/16 0:00  | 1/1/16 1:57  |
| 3 | 32310343   | 1/1/16 0:00  | 1/1/16 3:12  |
| 4 | 32308578   | 1/1/16 0:02  | 1/1/16 23:35 |
| 5 | 32305983   | 1/1/16 0:03  | 1/1/16 3:24  |
| 6 | 32305208   | 1/1/16 0:03  | 1/1/16 2:43  |
| 7 | 32309484   | 1/1/16 0:04  | 1/1/16 0:28  |

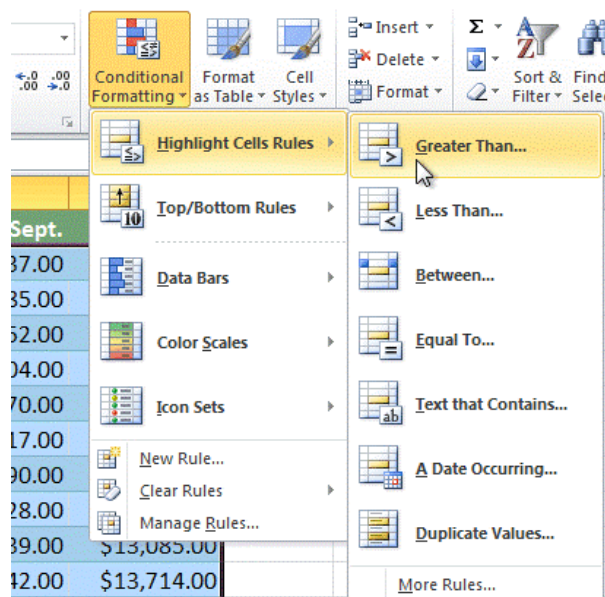


# Filtering



|   | A         | B            | C           | D           | E | F              |
|---|-----------|--------------|-------------|-------------|---|----------------|
| 1 | Unique Ki | Created Date | Closed Date | Agency Name |   | Complaint Type |

# Conditional Formatting



# Documentation

- Importance
- Guidelines

# Basic Function Syntax

```
=FUNCTION_NAME(parameter1, parameter2,...)
```

## For Example

```
=SUM(A5:A8)
```

- This tells Excel to sum all the values in cells A5, A6, A7, and A8

## Charting Noise Complaints by Week Day

| A            | B             | C      | D     | E             |
|--------------|---------------|--------|-------|---------------|
| Unique Key ▼ | Created Dat ▼ | hour ▼ | dow ▼ | Closed Date ▼ |
| 30195273     | 3/18/15 2:12  |        | 2     | =WEEKDAY(B2)  |
| 30203057     | 3/18/15 2:00  |        | 2     |               |
| 30197320     | 3/18/15 1:58  |        | 1     |               |
| 30194112     | 3/18/15 1:37  |        | 1     | 3/18/15 3:09  |
| 30202379     | 3/18/15 1:36  |        | 1     | 3/18/15 2:06  |
| 30199506     | 3/18/15 1:28  |        | 1     |               |

**fx** =CHOOSE(D2,"Sunday","Monday","Tuesday","Wednesday","Thursday","Friday","Saturday")

| A            | B             | C      | D     | E           |
|--------------|---------------|--------|-------|-------------|
| Unique Key ▼ | Created Dat ▼ | hour ▼ | dow ▼ | weekday ▼   |
| 30195273     | 3/18/15 2:12  |        | 2     | 4 Wednesday |
| 30203057     | 3/18/15 2:00  |        | 2     | 4           |
| 30197320     | 3/18/15 1:58  |        | 1     | 4           |
| 30194112     | 3/18/15 1:37  |        | 1     | 4           |
| 30202379     | 3/18/15 1:36  |        | 1     | 4           |
| 30199506     | 3/18/15 1:28  |        | 1     | 4           |

## Useful Functions in Excel

- =**SUM()**: Calculates the sum for a range of numbers
- =**COUNT()**: Counts the number of cells containing numbers in a range
- =**COUNTA()**: Counts the number of non-blank cells in a range
- =**HOUR()**: Extracts the hour from a timestamp
- =**WEEKDAY()**: Extracts the day of the week from a timestamp
- =**CHOOSE()**: Uses an index number to return a result from an ordered list of values
- =**MID()**: Select a specified number of characters from a text string
- =**LEFT()**: Select a specified number of characters from the beginning of a text string
- =**RIGHT()**: Select a specified number of characters from the end of a text string
- =**FIND()**: Find the location of a given character in a text string
- =**CONCATENATE()**: Combine characters together into a text string
- =**VLOOKUP()**: An operation to look up a value in another location based on an index value
- =**IF()**: A function for logical comparison between values to return a desired result given a particular condition

## Resources

- 311 Noise Complaint data - <https://data.cityofnewyork.us/>
- Microsoft Excel keyboard shortcuts - <http://bit.ly/excel-shortcut>
- 7 essential Excel tricks every office worker needs to know - <http://bit.ly/excel-7-tasks>
- 11 Places That Can Turn You Into A Microsoft Excel Power User - <http://bit.ly/become-excel-power-user>
- Data Sensemaking- <http://felinlovewithdata.com/teaching/developing-a-data-sensemaking-course>
- Data Visualization Tips and Pitfalls - <https://www.data-to-viz.com/caveats.html>
- Datapolitan training classes <http://training.datapolitan.com/>

## Contact Information

Email: [training@datapolitan.com](mailto:training@datapolitan.com)

Twitter: [@datapolitan](https://twitter.com/datapolitan)

Website: <http://www.datapolitan.com>

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## Additional Notes

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## Implementation Guide

| Concept/Technique  | Why It's Important | How I Can Use It |
|--------------------|--------------------|------------------|
| The Value of Data  |                    |                  |
| What is Analysis?  |                    |                  |
| Aggregating Data   |                    |                  |
| Sorting Data       |                    |                  |
| Filtering Data     |                    |                  |
| Manipulating Data  |                    |                  |
| Visualizing Data   |                    |                  |
| Functions in Excel |                    |                  |
| Documenting Steps  |                    |                  |
| Types of Charts    |                    |                  |