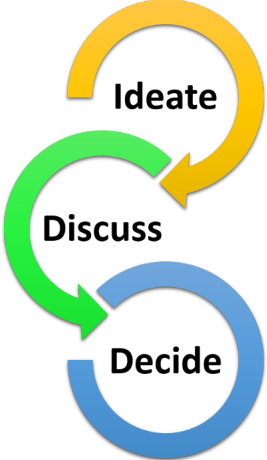


Data Visualization with Excel

Follow along at: <http://bit.ly/data-vis-excel>

See the code at: <http://bit.ly/data-vis-excel-code>

Introduction to Data Analytics Review

	<p>Our Method for Generating Ideas (Brainstorming)</p> <p>Ideate - Generate at least 3 ideas (ideally more), each on their own Post-It Notes</p> <p>Discuss - Review the ideas generated</p> <p>Decide - Come to a consensus as a group</p>
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<p>Documenting Your Work</p> <ul style="list-style-type: none"> - Tab in workbook describing source of data, steps in the analysis, and any other important information - Color Code your tabs to categorize your worksheets - Add comments to a cell (right click, insert comment) - Insert comments in a new separate column 	<p>5 Data Analytics Tasks</p> <ul style="list-style-type: none"> - Sort - Filter - Aggregate - Transform - Visualize
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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

Key Ideas

- Conditional Formulas
- Logical Functions
- Nesting Functions

- Joining Datasets

	A	B	
1	Prop ID	Park Name	Full Bor...
2	B045		Brooklyn
3	B029-ZN03	=VLOOKUP(A3,'DailyTasks'!C:G,5,FALSE)	Brooklyn

Visualizing Data

Chart Types - As you prepare your graphics, it is important to choose a chart which best suits your data.

Data Types	Type of Charts
Nominal - Data sorted into categories	Bar Charts
Ordinal - Arbitrary numerical scale	Pie Chart & Bar Chart
Discrete - Represents units	Arrays, Pie Chart & Bar Chart
Continuous - Can be measured on a continuum	Line Chart

Key Elements to Consider When Designing a Visualization:

Type of Chart	
Amount of Data	
Title	
Use of Color	
Data-Ink Ratio	

How do you learn to create good visualizations? ...Make lots of bad visualization.

Do's of visualizations	Don'ts of visualizations

Key Excel Functions

=SUM(): Calculates the sum for a range of numbers
=SUMIF(): Calculates the sum of cells that meet multiple criteria
=COUNT(): Counts the number of cells containing numbers in a range
=COUNTA(): Counts the number of non-blank cells in a range
=COUNTIF(): Counts the number of cells that meet a criteria
=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 lookup 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

Formulas Referenced in Class

=LEFT(A2,1): Extract the Boro from the Prop ID
=IF(HOUR(G2)<12,"Morning","Afternoon"): Determine time of day for an inspection start
=IF(B2="B","Brooklyn",IF(B2="M","Manhattan",IF(B2="Q","Queens",IF(B2="X","Bronx",IF(B2="R","Staten Island","Other"))))): Create the Full Boro from the Prop ID
=IF(LEFT(A2)="B","Brooklyn",IF(LEFT(A2)="M","Manhattan",IF(LEFT(A2)="Q","Queens",IF(LEFT(A2)="X","Bronx",IF(LEFT(A2)="R","Staten Island","Other"))))): Combine Short and Full Boro
=VLOOKUP(A2,'Daily Tasks Dataset'!A:G,7,FALSE): VLOOKUP for Park Name

Your Notes

Resources

- **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>
- **Choosing a good chart** - https://extremepresentation.typepad.com/blog/2006/09/choosing_a_good.html
- **Periodic Table of Visualization Methods** - http://www.visual-literacy.org/periodic_table/periodic_table.html#

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Implementation Guide

Concept/Technique	Why It's Important	How I Can Use It
Functions in Excel		
Conditional Formulas		
Logical Functions		
Nesting Functions		
Joining Data		
Considering Key Visualization Elements		
Thinking Intentionally About Types of Charts		