

Introduction to Statistical Analysis

Follow along at: <http://bit.ly/intro-stats>

See the code at: <http://bit.ly/intro-stats-code>

Key Questions for the Morning

- Why statistics?

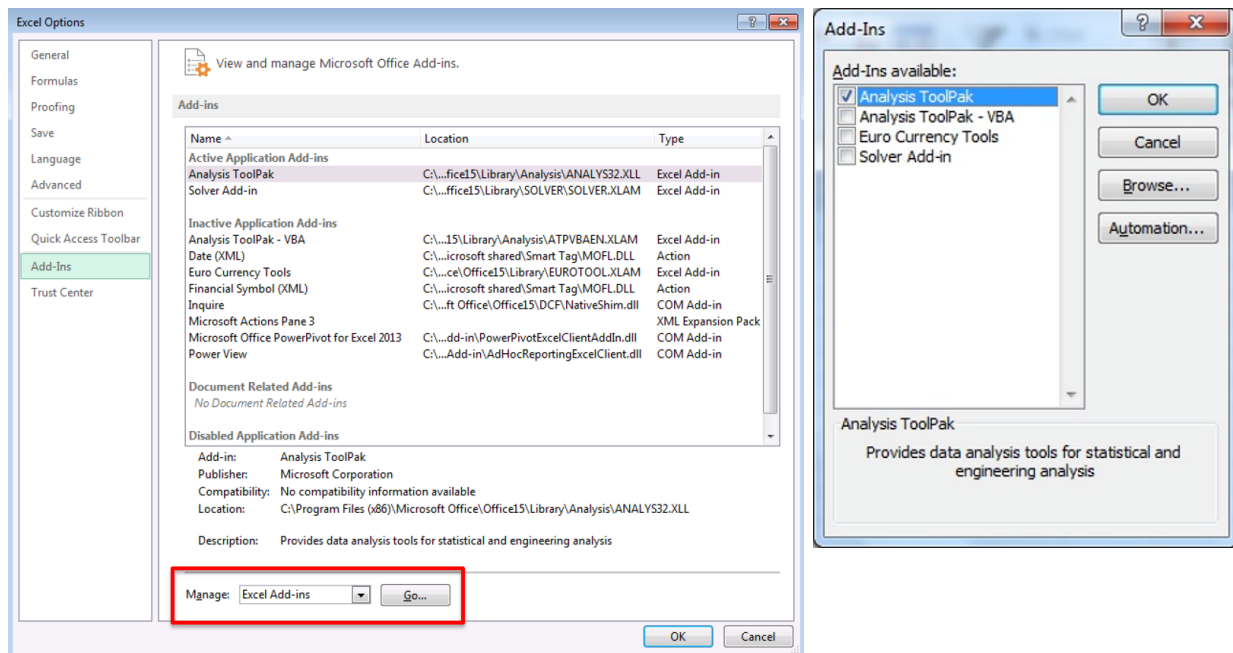
	Mean	Median	Mode
What is it?			
Why is it important?			
When do I use it?			

Histograms

What are they?

How are they valuable?

Installing Data Analysis ToolPak

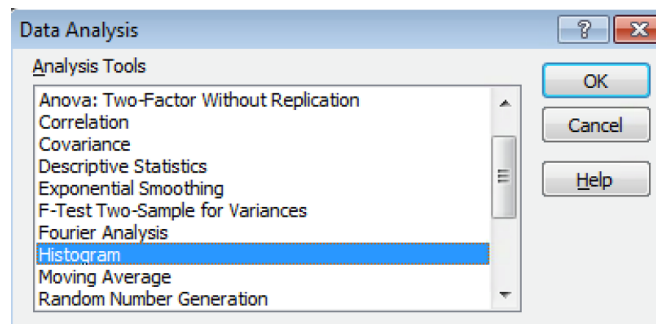
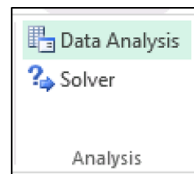


Creating a Histogram

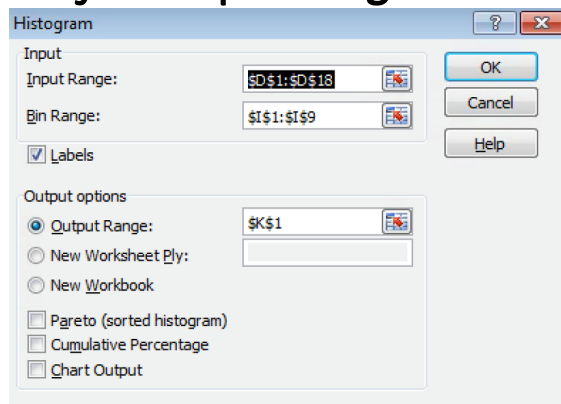
1. Setup Your Bins

Bins
60
62
64
66
68
70
72
74

2. Open the Data Analysis ToolPak -> Histogram

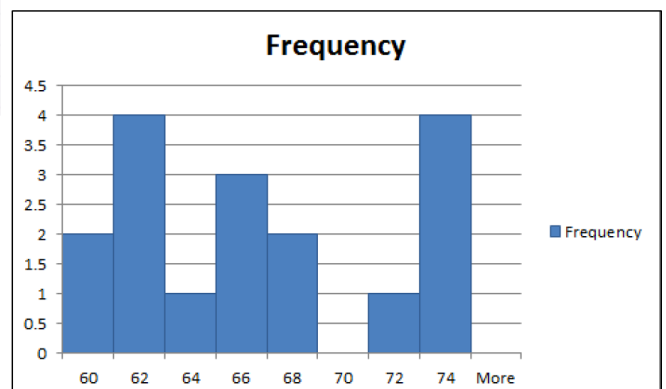
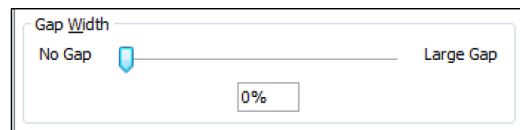
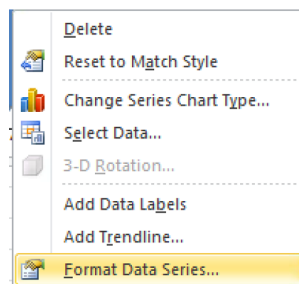
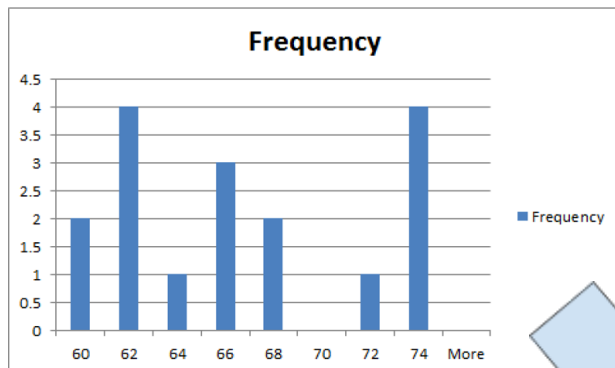
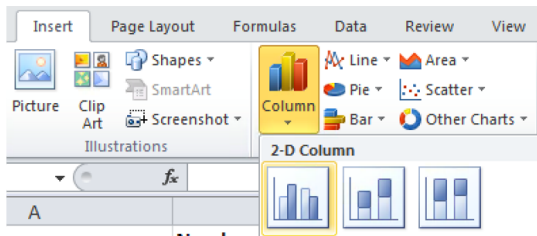


3. Specify the Input Range, Bin Range, and Output Range



K	L
Bins	Frequency
60	2
62	4
64	1
66	3
68	2
70	0
72	1
74	4
More	0

4. Graph the Data



Data Distributions

Normal	Long-Tail	Bi-Modal
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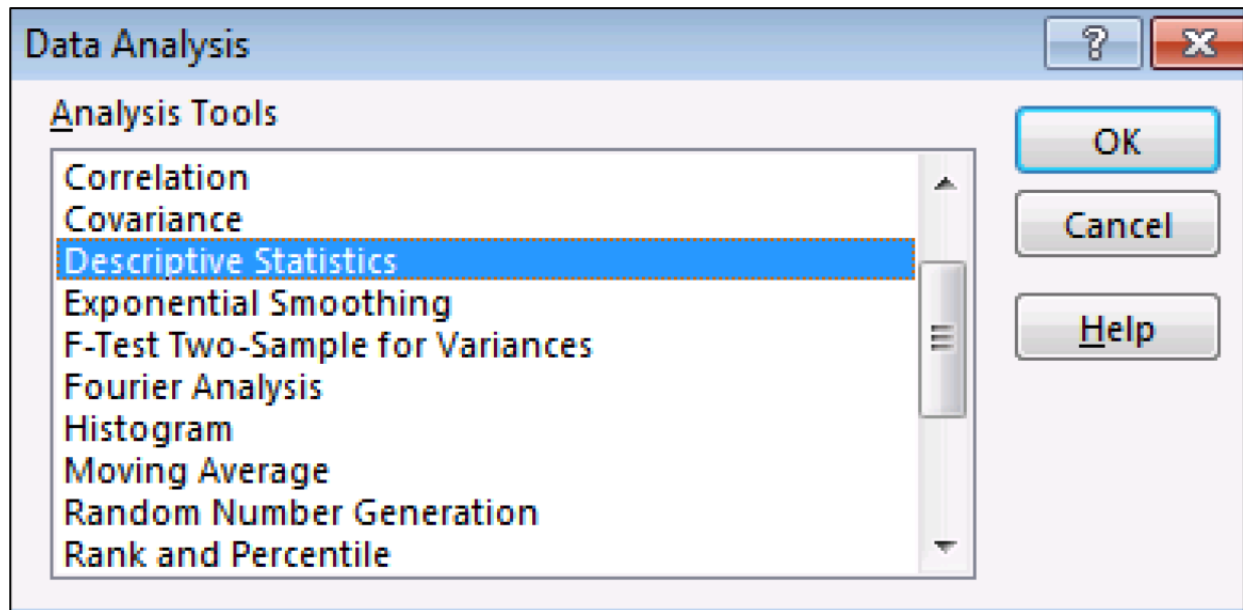
	Range	Quartiles	Interquartile Range	Standard Deviation
What is it?				
Why is it important?				
When do I use it?				

Calculating Outliers

Pivot Tables

Key Questions for the Afternoon

Calculating Descriptive Statistics



Selecting Bin Size for Histograms

Why is this important?

What are some of the challenges?

Correlations

Why are they important?

How do we measure correlation?

What should we always remember?

_____ does not imply _____

Predictive Modeling

What is it?

How is it helpful?

Linear Regression

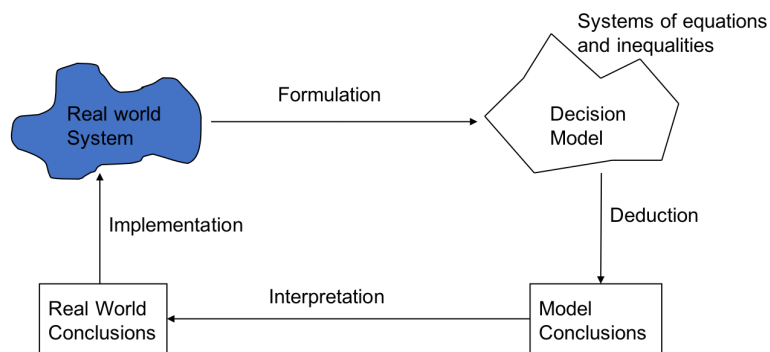
What is it?

How is it helpful?

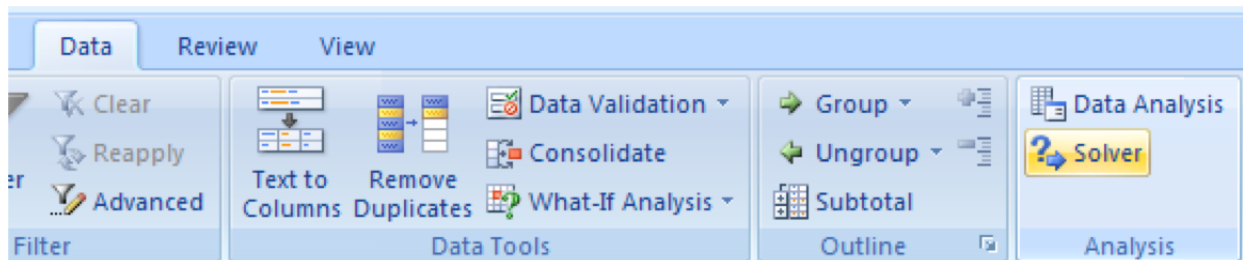
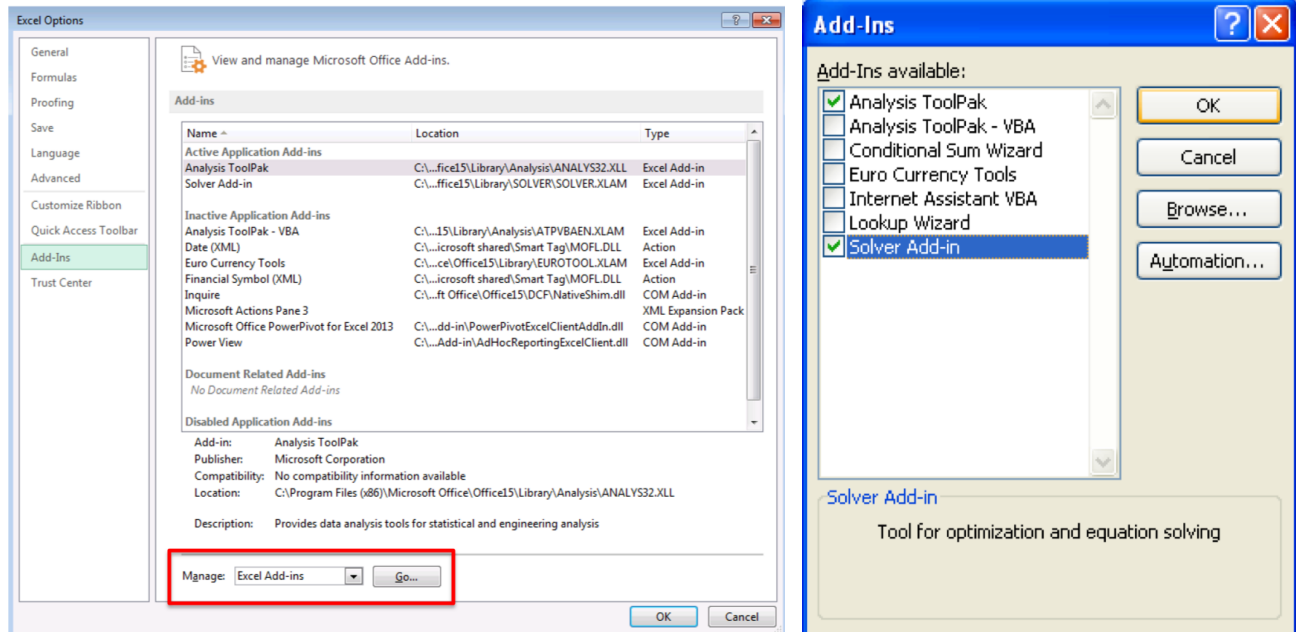
Decision Modeling

What is it?

How is it helpful?



Installing Solver



Notes on Creating a Data Model

Resources

- Neil J. Salkind, Statistics for People Who (Think) They Hate Statistics (Great demonstration of how to do statistics in Excel)
- John W. Foreman, Data Smart: Using Data Science to Transform Information into Insight (Shows how to do advanced data science in Excel)
- IQuantNY "The Huge Correlation between Median Income and Recycling in NYC"
<http://iquantny.tumblr.com/post/79846201258/the-huge-correlation-between-median-income-and> (The inspiration for our exercise)
- Datapolitan Training Classes: <http://training.datapolitan.com>

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<http://www.datapolitan.com>

About Datapolitan

For over 5 years, Datapolitan has worked to empower public sector clients with the skills, techniques, concepts, and mindsets necessary to make data meaningful and actionable to effectively manage their resources and realize operational value from the information they collect. We do this through a range of consulting and training services for local government agencies and nonprofit organizations, customized to their strategic vision and operational needs.