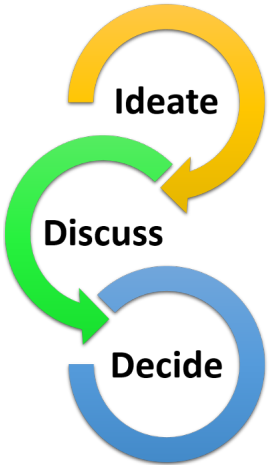
Advanced Analysis with SQL

Follow along at: http://bit.ly/advanced-analysis-sql

See the code at: http://bit.ly/advanced-analysis-sql-code

Introduction to Data Analytics Review



Our Method for Generating Ideas (Brainstorming)

Ideate - Generate at least 3 ideas (ideally more), each on their own Post-It Notes
Discuss - Review the ideas generated
Decide - Come to a consensus as a group

Excel I Review

Documenting Your Work

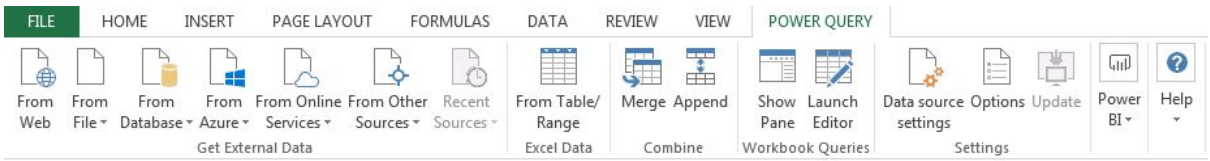
- Tab in workbook describing source of data, steps in the analysis, and any other important information
- Color Code your tabs to categorize your worksheets
- Add comments to a cell (right click, insert comment)
- Insert comments in a new separate column

5 Data Analytics Tasks

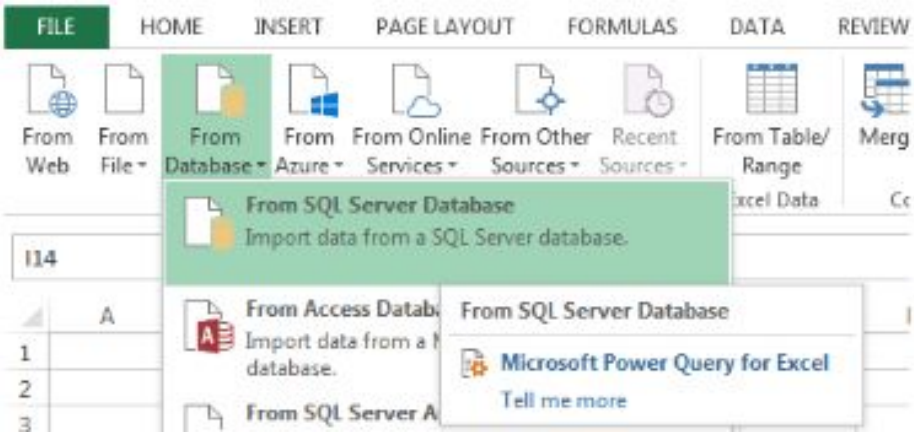
- Sort
- Filter
- Aggregate
- Transform
- Visualize

Importing data into Excel with SQL - Importing from a database

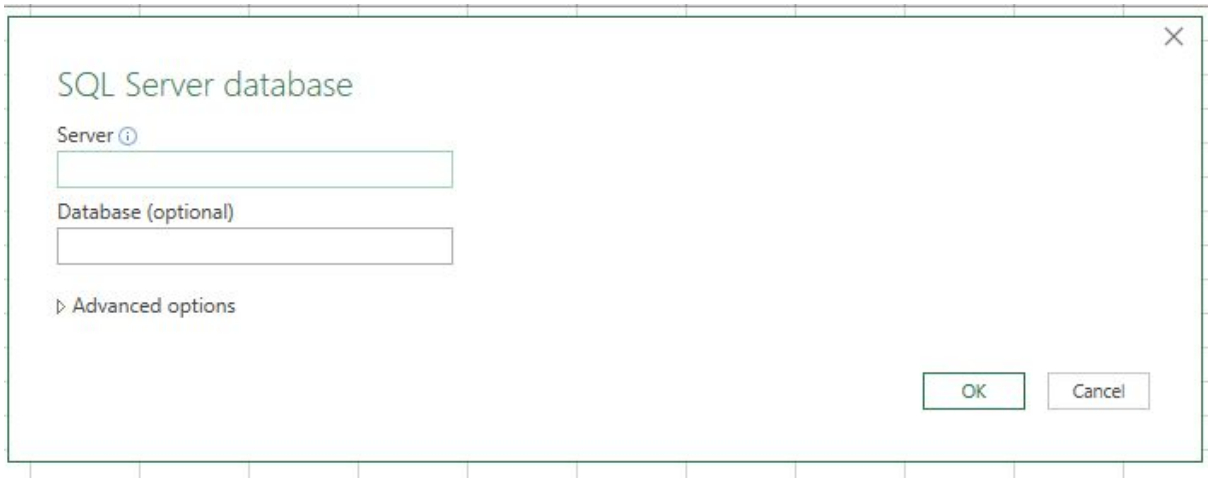
- Click on the Power Query ribbon



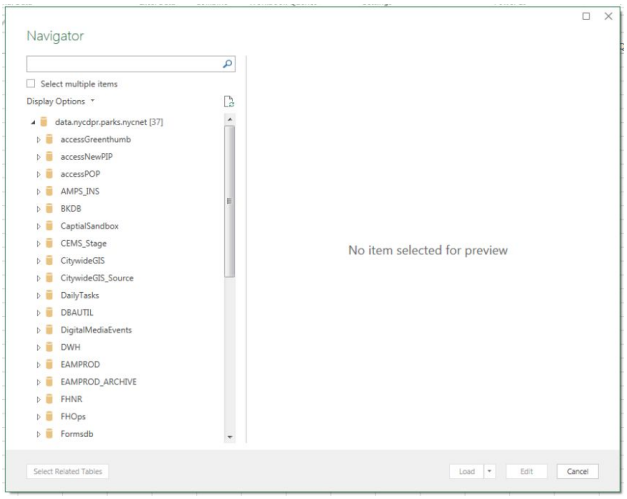
- Power Query > From Database > From SQL Server Database



- Enter `data.nycdpr.parks.nycnet` in the **Server** field



- Enter `DWH` in the **Database** field
- Preview databases, then click **Load** to load one



Key Questions

- What is a Database?

- What is a Table?

Key SQL Keywords

SELECT		
FROM		
WHERE		
WHERE operators	= - equal to > - greater than >= - greater than or equal to	< - less than <= - less than or equal to != and <> - not equal to

Queries Used Today

Query	Output
`SELECT *` `FROM tbl_ref_calendar`	
`SELECT ref_date, fiscal_year` `FROM tbl_ref_calendar`	
`SELECT TOP 5 *` `FROM tbl_dailytasks`	

`SELECT TOP 10 *`
`FROM tbl_dailytasks`
`WHERE graffiti = 1`	

`SELECT TOP 10 *` `FROM tbl_dailytasks`	

`WHERE nhours > 1`	

`SELECT *`
`FROM tbl_dailytasks`
`WHERE graffiti = 1 AND nhours > 1`	

`SELECT *`
`FROM tbl_dailytasks`
`WHERE omppropid = 'X045-01' OR`
`omppropid = 'X045-02'`	

`SELECT *`
`FROM tbl_dailytasks`
`WHERE NOT (omppropid = 'X045-01' OR`
`omppropid = 'X045-02')`	

`SELECT *`
`FROM INFORMATION_SCHEMA.COLUMNS`
`WHERE TABLE_NAME='tbl_dailytasks'`	

`SELECT nhours * 60` `FROM tbl_dailytasks`	
`SELECT LEFT(omppropid, 1)` `FROM tbl_dailytasks`	

`SELECT`
`  CASE`
`  WHEN LEFT(omppropid, 1) = 'B' THEN`
`'Brooklyn'`
`  WHEN LEFT(omppropid, 1) = 'M' THEN`
`'Manhattan'`
`  WHEN LEFT(omppropid, 1) = 'X' THEN`
`'Bronx'`
`  WHEN LEFT(omppropid, 1) = 'R' THEN`
`'Staten Island'`
`  WHEN LEFT(omppropid, 1) = 'Q' THEN`
`'Queens'`
`  END AS boro,`
`  COUNT(*) AS dt_count`
`FROM tbl_dailytasks`
`WHERE LEFT(omppropid, 1) IS NOT NULL`
`GROUP BY LEFT(omppropid, 1)`
`ORDER BY LEFT(omppropid, 1)`	

SELECT * FROM tbl_dailytasks ORDER BY date_worked	
SELECT * FROM tbl_dailytasks ORDER BY date_worked DESC	
SELECT * FROM tbl_dailytasks ORDER BY sector, date_worked DESC	
SELECT sector, SUM(nhours) FROM tbl_dailytasks GROUP BY sector	
SELECT pip.*, sites.[Prop Name], sites.[Site Name] FROM tbl_PIP_InspectionMain AS pip LEFT JOIN tbl_PIP_AllSites AS sites ON pip.[Prop ID] = sites.[Prop ID]	

Data Types in a Database

- Function of Data Types

- Importance of Data Types

Numeric

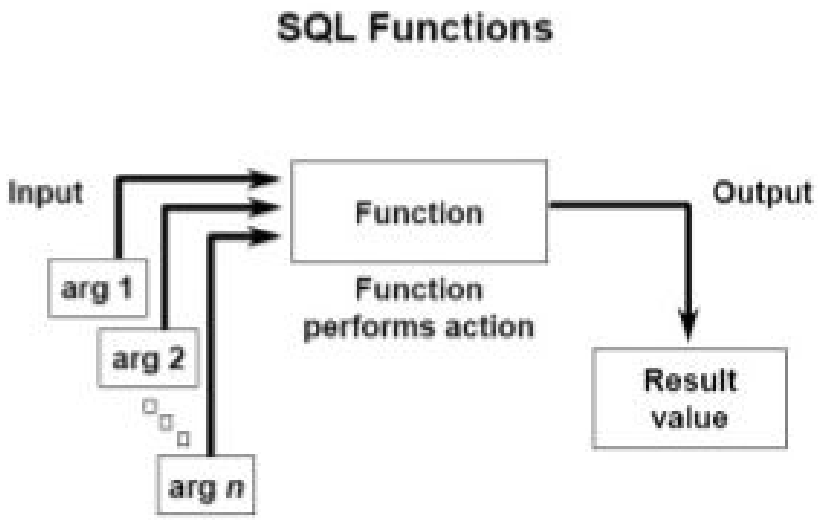
`int`	a number with no digits after the decimal point, like 5 or 100349
`numeric`	a number with digits after the decimal point, like 5.01 or 100.349

Text

`varchar`	text with a maximum length, like Queens
`text`	text with no maximum length, like an open comment field

Other common data types

`date`	a specific date, like 2002-10-17
`datetime`	a specific date and time, like 2002-10-17 06:13:00



Documentation

- Importance

- Best Practices

5 Analytic Tasks in SQL

Sort	
Filter	
Aggregate	
Transform	
Visualize	

Joins in SQL

Key Concepts to Know

Resources

- SQL: One of the Most Valuable Skills - http://www.craigkerstiens.com/2019/02/12/sql-most-valuable-skill
- Microsoft SQL Documentation - https://docs.microsoft.com/en-us/sql/?view=sql-server-2017
- SQL Zoo - https://sqlzoo.net/wiki/SQL_Tutorial

Contact Us

Email: training@datapolitan.com Twitter: @datapolitan Website: http://www.datapolitan.com

Your Notes

Implementation Guide

Concept/Technique	Why It's Important	How I Can Use It
What is a Database?		
What is a Table?		
SQL Keywords		
Data Types		
SQL Functions		
Joins in SQL		