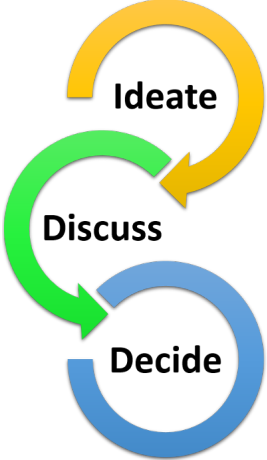


# Advanced Analysis with SQL

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

	<b>Our Method for Generating Ideas (Brainstorming)</b>  <b>Ideate</b> - Generate at least 3 ideas (ideally more), each on their own Post-It Notes <b>Discuss</b> - Review the ideas generated <b>Decide</b> - Come to a consensus as a group
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## Excel I Review

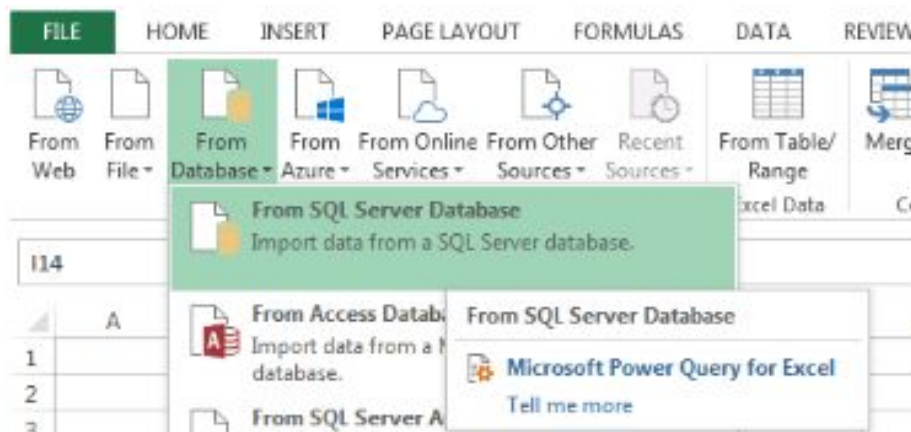
<b>Documenting Your Work</b> <ul style="list-style-type: none"><li>- Tab in workbook describing source of data, steps in the analysis, and any other important information</li><li>- Color Code your tabs to categorize your worksheets</li><li>- Add comments to a cell (right click, insert comment)</li><li>- Insert comments in a new separate column</li></ul>	<b>5 Data Analytics Tasks</b> <ul style="list-style-type: none"><li>- Sort</li><li>- Filter</li><li>- Aggregate</li><li>- Transform</li><li>- Visualize</li></ul>
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# Importing data into Excel with SQL - Importing from a database

- Click on the Power Query ribbon



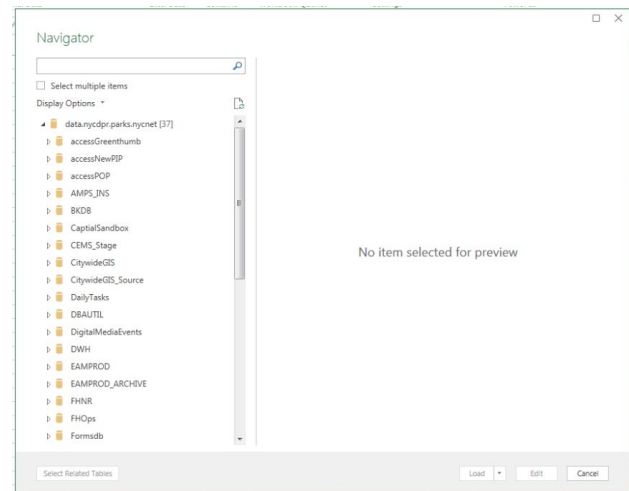
- Power Query > From Database > From SQL Server Database



- 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?

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## 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 TOP 10 * FROM tbl_dailytasks WHERE graffiti = 1 AND nhours > 1	
SELECT TOP 10 * FROM tbl_dailytasks WHERE omppropid = 'X045-01' OR omppropid = 'X045-02'	
SELECT TOP 10 * FROM tbl_dailytasks WHERE NOT (omppropid = 'X045-01' OR omppropid = 'X045-02')	
SELECT * FROM INFORMATION_SCHEMA.COLUMNS WHERE TABLE_NAME='tbl_dailytasks'	
SELECT TOP 10 nhours * 60 FROM tbl_dailytasks	
SELECT TOP 10 LEFT(omppropid, 1) FROM tbl_dailytasks	
SELECT TOP 10 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 FROM tbl_dailytasks WHERE LEFT(omppropid, 1) IS NOT NULL	
SELECT TOP 10 * FROM tbl_dailytasks ORDER BY date_worked	

SELECT TOP 10 * FROM tbl_dailytasks ORDER BY date_worked DESC	
SELECT TOP 10 * 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

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<code>int</code>	a number with no digits after the decimal point, like 5 or 100349
<code>numeric</code>	a number with digits after the decimal point, like 5.01 or 100.349

## Text

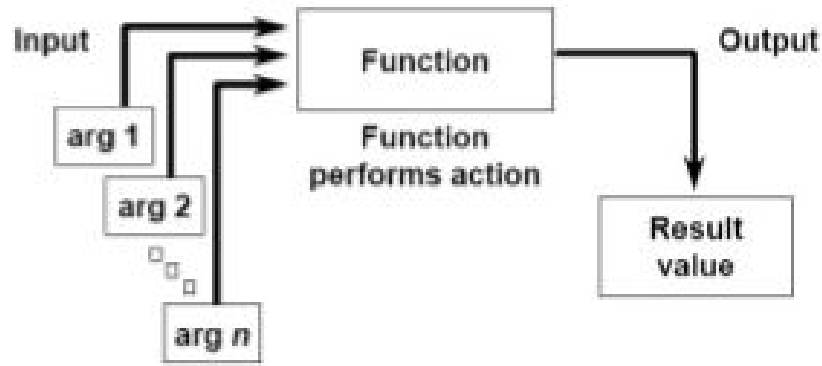
<code>varchar</code>	text with a maximum length, like Queens
<code>text</code>	text with no maximum length, like an open comment field

## Other common data types

<code>date</code>	a specific date, like 2002-10-17
<code>datetime</code>	a specific date and time, like 2002-10-17 06:13:00

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## SQL Functions



### Documentation

- Importance
- Best Practices



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## 5 Analytic Tasks in SQL

Sort	
Filter	
Aggregate	
Transform	
Visualize	

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# 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](https://sqlzoo.net/wiki/SQL_Tutorial)

### Contact Us



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<http://www.datapolitan.com>

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# Your Notes

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## 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		