



Excel: Next Level Skills
Power Query, the Data Model & More

With Melissa Esquibel
Author of Dirty Data



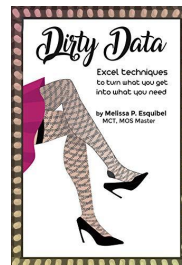
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Roadmap

- ▲ Setting yourself up for success: clean data
- ▲ The Data Model: connecting this with that
- ▲ Power Query: Merge and Append Queries
- ▲ Tips for fixing what's broken
- ▲ Pivoting a Data Model

Setting Yourself up for Success: Clean Data

- ▲ One row: one record
- ▲ No merged cells
- ▲ Single-row column titles
- ▲ Consistent data types
- ▲ No completely blank rows or columns



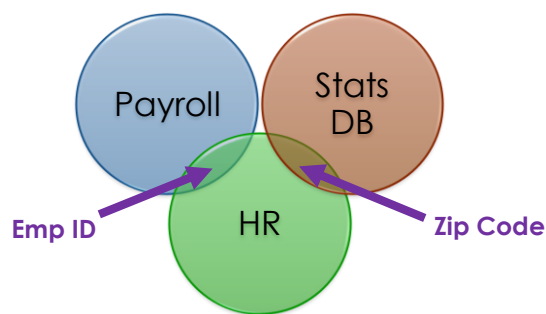
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Shortcuts to Test the Wholeness of Your Data

- ▲ From the 1st cell, Ctrl+↓
 - Should go to the last row of data
 - It will stop at a blank cell
- ▲ From the leftmost column, Ctrl+→
 - Should go to the last column of data
 - It will stop at a blank cell
- ▲ From any cell, Ctrl+A
 - Should select your entire dataset
 - Even with blank cells in the middle

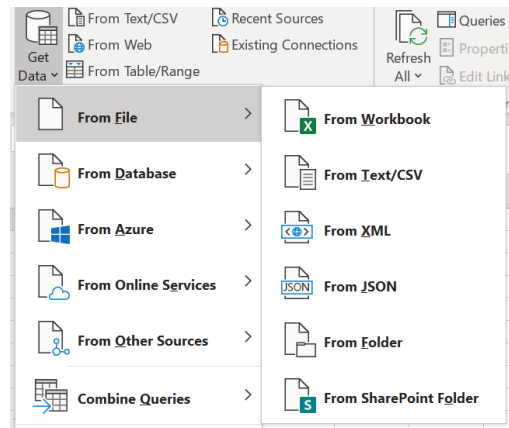
The Data Model: Connecting This with That

- ▲ Data model is a structure that you can
- ▲ Use to create reports and insights.
- ▲ You don't have to see it to know it's there.



How to Get Data for Your Model

- ▲ From within a workbook
- ▲ Between workbooks
- ▲ From almost anywhere!

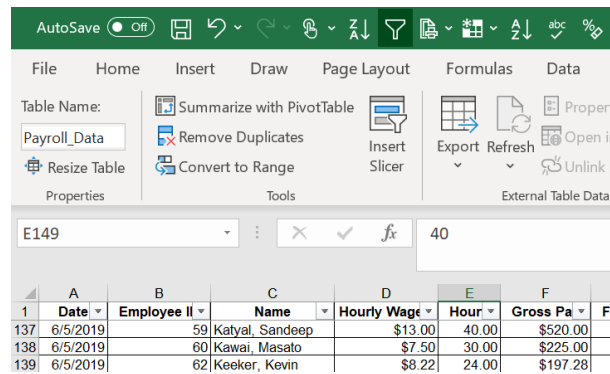


From almost anywhere!

- | | |
|--------------|--------------|
| ▲ Azure | ▲ IBM DB2 |
| ▲ SQL Server | ▲ Facebook |
| ▲ Oracle | ▲ Salesforce |
| ▲ Sybase | ▲ SharePoint |
| ▲ SAP | ▲ Text files |

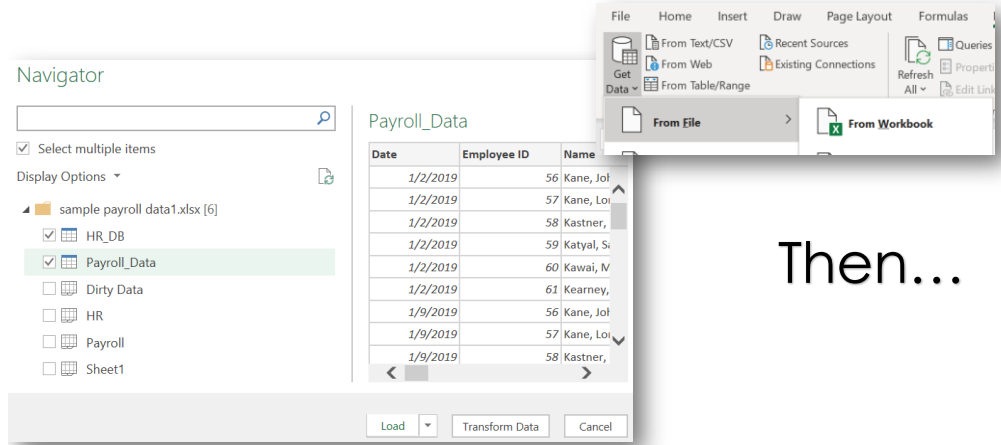
From Within a Workbook

- ▲ Make data into tables (Ctrl+T)
- ▲ Name tables
- ▲ Get & Transform: From Table/Range



Between Workbooks

- ▲ Convert ranges to tables
- ▲ Get & Transform, Get Data, From File
- ▲ Select tables, Load or Load to...



Create Relationships

- ▲ From ribbon
- ▲ From Power Query – Edit and create merge query

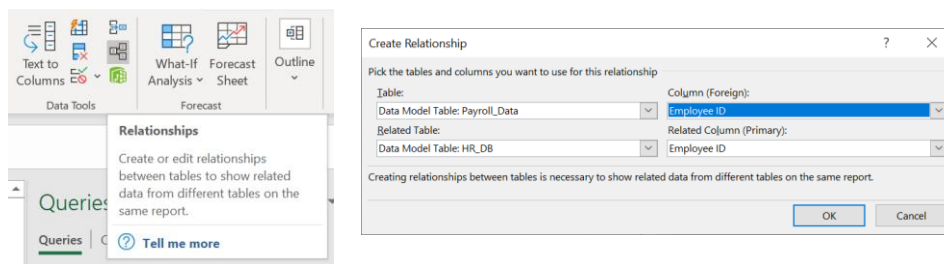
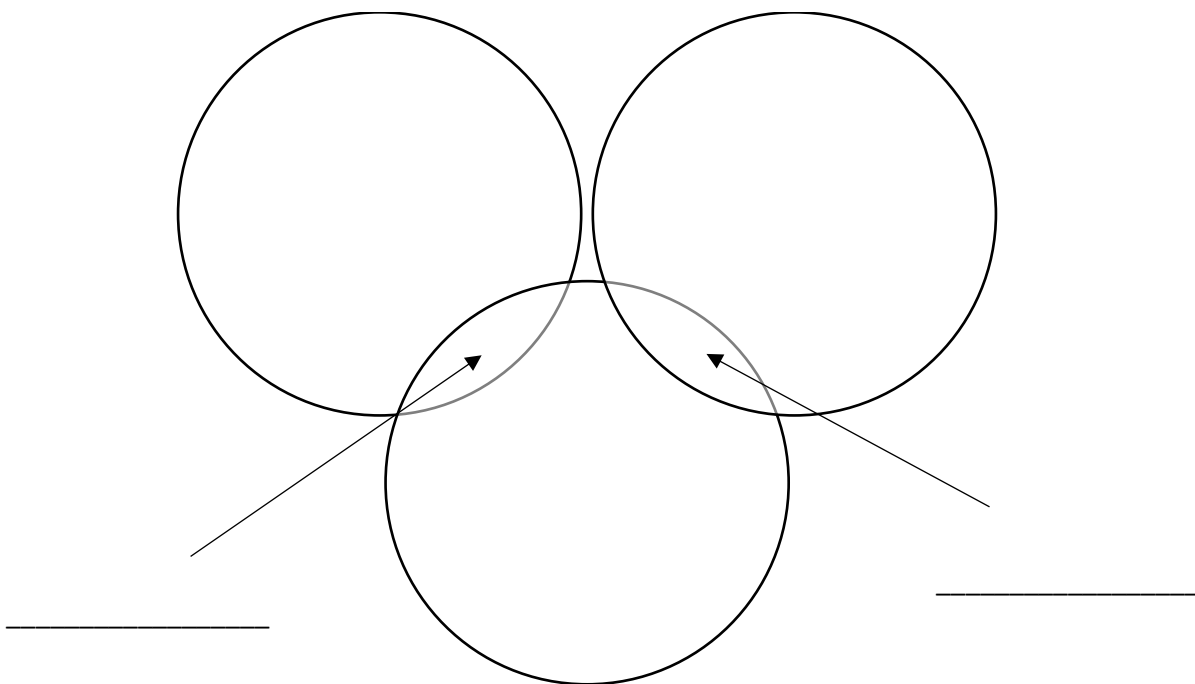
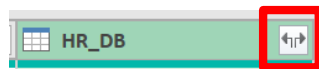


Diagram Your Data Model



From Power Query

- ▲ Select table
- ▲ Click Merge Queries
- ▲ Select related field in each dataset
- ▲ Expand connected table
- ▲ Choose all or some fields



Merge

Select a table and matching columns to create a merged table.

Payroll_Data

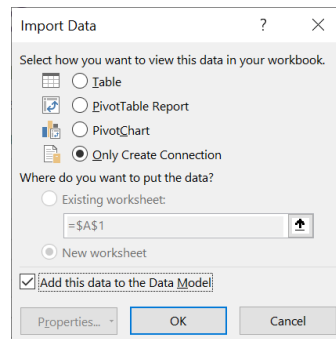
Date	Employee ID	Name	Hourly Wage	Hours	Gross
1/2/201	56	Kane, John	13.25	40	
1/2/201	57	Kane, Lori	25	40	
1/2/201	58	Kastner, Steven H.	31	39	
1/2/201	59	Katyal, Sandeep	13	40	
1/2/201	60	Kawai, Masato	7.5	30	

HR_DB

Employee ID	Name	Office	E/N	Start Date	Title
56	Kane, John	Central	E	1/2/2007	EVP
57	Kane, Lori	District A	N	11/19/2018	Manager
58	Kastner, Steven H.	District B	N	4/8/2014	Manager
59	Katyal, Sandeep	Central	E	8/20/2014	VP HR
60	Kawai, Masato	District A	N	5/9/2019	Operator

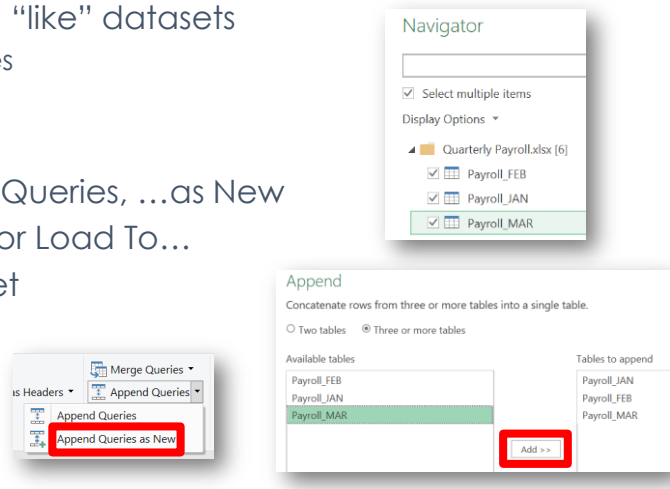
Close & Load

- ▲ Close & Load – may create “extra” tables
- ▲ Close & Load To... – creates connection and/or adds to Data Model



Append Queries

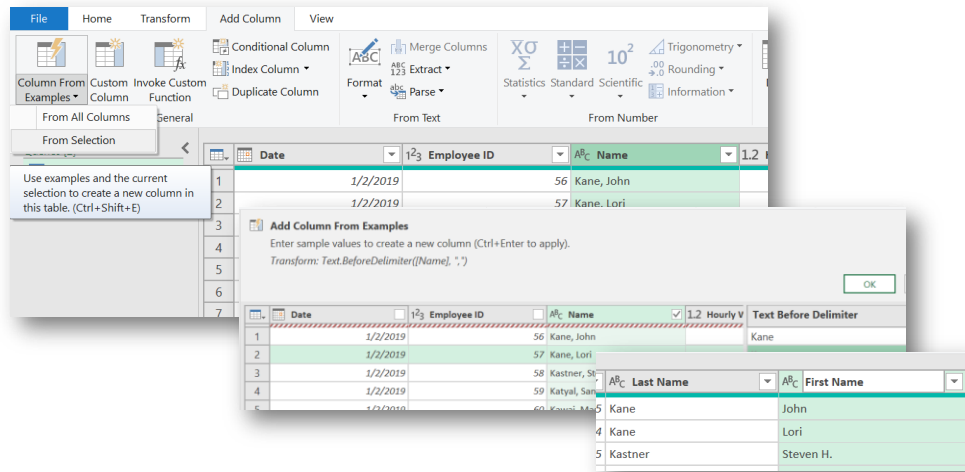
- ▲ Get data from “like” datasets
 - Like column titles
 - Like structure
- ▲ Transform
- ▲ Click Append Queries, ...as New
- ▲ Close & Load or Load To...
- ▲ New Worksheet



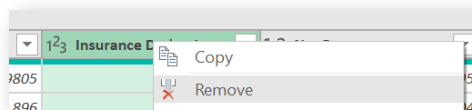
Tips for Fixing What's Broken

- ▲ Doing the hard work once
 - Steps get recorded
 - Refresh reruns the steps
- ▲ Using the New Columns feature
- ▲ Removing columns and rows

Using the New Columns Feature



Removing Columns and Rows



Pivoting a Data Model

- ▲ Using fields with multiple datasets
- ▲ The importance of relationships

Pivot Table 101

- Insert tab
- Tables group
- Pivot Table
- This workbook's Data Model

The screenshot shows an Excel PivotTable with 'Row Labels' and 'Sum of Net Pay'. The data is as follows:

Row Labels	Sum of Net Pay
Central	19790.8329
District A	23275.88801
District B	24199.8915
Grand Total	67266.61241

The PivotTable Fields task pane on the right shows the following configuration:

- Active: All
- Choose fields to add to report:
- Search: (empty)
- Medicare 1.45%: ☐
- Total Tax Withheld: ☐
- Insurance Deduction: ☐
- Net Pay: ☒
- Table2: ☒
- Employee ID: ☐
- Name: ☐
- Office: ☒

What types of reports can you generate with your data in this configuration?

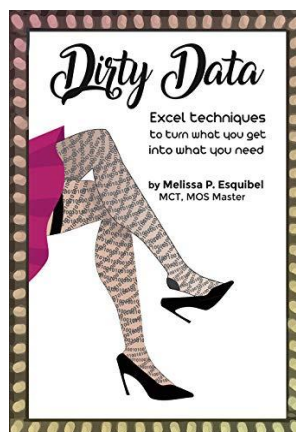
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