Microsoft Power Tools for Data Analysis #01

Class Introduction Video

Notes from Video:

Table of Contents:

Name of Class:

BI 348 – Microsoft Power Tools for Data Analysis:
- Power Query
- Power Pivot
- DAX
- Power BI Desktop
- Excel

For Creating:
- Data Models, Reports, Dashboards and Analytics

Taught by Mike excelisfun Girvin, Excel MVP 2013-2020
- A class about connecting to multiple source of data, transforming the data into a refreshable & dynamic data model, and building reports and dashboards to provide insightful and actionable information.

Prerequisites for this class:
- Busn 216: Excel Basics, https://www.youtube.com/playlist?list=PLrRPvpgDmw0n34OMHeS94epMaX_Y8Tu1k
- Busn 218: Advanced Excel, https://www.youtube.com/playlist?list=PLrRPvpgDmw0lcTfXZV1AYEkeslJJcWNKw
- Busn 210: Business Statistics, https://www.youtube.com/playlist?list=PLrRPvpgDmw0ngx_uPhvasTbOWLOztsaBj

Note: The E-DAB Video Class reviews the relevant topics from the above listed Busn 216 and Busn 218 prerequisite classes.

What Version of Excel:
- Office 365 (updated each month)

What Version of Power BI Desktop:
- Free Tool we will download (update each month)

Over View of Topics for the class:

1. Data Analysis / Business Intelligence terms and concepts that we will learn in this class:
   - Proper Data Set
   - Fact Table
   - Dimension Tables
   - Relationships
   - Star Schema
   - ETL
   - Measures
   - Dashboards
   - SQL
   - Data Warehousing
2. Learn how to use Excel Power Query:
   - Import Data from multiple sources
   - Clean and Transform Data
   - Create Data Components for Star Schema Data Models
   - Load Data To Excel, the Data Model and Connection Only
   - Replace Complicated Excel Solutions with Power Query Solution
   - Use the Power query User Interface to create Power Query Solutions
   - Learn about the Case Sensitive, Function-based M Code Language that is behind the scenes in Power Query
3. Learn how to use Excel Power Pivot:
   - Excel Power Pivot provides:
     i. Data Model where we can have multiple tables, formulas and relationships (Star Schema)
     ii. Columnar Database to hold "Big Data" and process quickly over that "Big Data"
     iii. New Formula Language called DAX:
       1. Many More Calculations than in Standard PivotTable
       2. Build One Formula that can work in many reports
       3. Add Number Formatting to Formulas
   - Excel Power Pivot to:
     i. Replace VLOOKUP Formulas and Single Flat PivotTable Data Source with Multiple Tables, Relationships in the Data Model to create more efficient Reports & Dashboards
     ii. Use Power Pivot Columnar Database to hold millions of rows of data
     iii. DAX formulas have more Power than Standard PivotTable Calculations
4. Learn about Building Star Schema Data Models:
   a. Why they are important in Power Pivot and Power BI Desktop
   b. How to build them using:
     i. Power Query
     ii. Power Pivot
     iii. DAX
     iv. Power BI Desktop
5. Learn how to author DAX Formulas for Excel's Power Pivot & Power BI Desktop:
   a. Calculated Column Formulas for Data Model
   b. Measure Formulas for PivotTables
   c. DAX Functions like SUMX, CALCULATE, RELATED, and Much More…
   d. Lean why we must create Explicit rather than Implicit formulas
   e. Learn how Row Context works in formulas

  f. Learn how Filter Context works in formulas
  g. Learn about Scalar & Table Functions
  h. Use DAX Studio to visualize and analyze DAX Formulas
6. Learn how to use Power BI Desktop:
  a. Power Query to import, clean, transform and create Star Schema Data Models
  b. Create Relationships
  c. Create DAX Formulas
  d. Build Interactive Visualizations
  e. Build Dashboards
7. Learn how to use Excel:
- Spreadsheet Formulas & Functions
- Standard PivotTables
- Power Query
- Power Pivot
- Build Data Model PivotTables and the resultant Reports, Dashboards and Analytics
8. Building Refreshable, Insightful Dashboards
  a. Build Excel Dashboards
  b. Build Power BI Dashboards
9. Case Studies to practice using Power Pivot & Power BI Desktop for Reporting, Building Dashboards and Building Business Analytics Solutions