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## Course Outline: Self Service BI Boot Camp

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Prepare to change your company's reporting game forever! We know that data is not usually stored in nicely curated databases and often - even when it is - the data analyst doesn't have access to it. Instead, we must piece together data provided in text files, Excel files, web pages, and even the body of emails to build the business intelligence solutions we need. Until now this has been a painful process with a great deal of cut and paste effort, and updates have been tedious and error prone. That stops with this workshop!

The Self-Service BI Boot Camp begins with a **deep exploration of Power Query**. Built-in to both Excel and Power BI, Power Query can clean, reshape, and combine your data with ease – no matter where it comes from. Converting ASCII files into tables, combining multiple text files in one shot, and even un-pivoting data is not only simple, but an investment in the future. With Power Query's robust feature set at our fingertips, and our data clean and ready to be used, we're now ready to explore **creating dynamic business intelligence models that are refreshable with a single click**.

Next, we introduce **the benefits, concepts and key terminology of Dimensional Modeling**. Based on the Power Pivot Data model, it's this portion that lays the cornerstone of your reporting solution. You'll learn the difference between Facts, Dimensions and Relationships, where they live, and how to design and link their parent tables correctly. You'll also learn some key Power Query recipe patterns for solving two of the most frequent challenges when trying to relate tables together.

While learning to create the proper dimensional model is critical to every solution, **the visible magic happens in the next section of the workshop where we talk about DAX**. This powerful formula language allows us to report on much more than just the 'Sum of Sales'. In this workshop, you'll learn how to create a variety of DAX measures, understand how DAX measures are calculated, and how to control their Filter Context. These are all critical skills for building your own advanced measures for your work.

No course on self-service BI would be complete without **discussing calendar intelligence**, which is exactly why we cover it. From building calendar tables on the fly to exploring the "Golden Date" pattern, we'll work through the steps required for extending our model to report based on our own year-end.

Finally, we'll dive into **specific features of Excel and Power BI that every analyst should know**. How easy it is to create a Power BI report and use a variety of different visuals for displaying data? How can you publish a Power BI report and share it with other users? How do you manage those permissions? All these questions will be answered!

Throughout this 3-day workshop, you'll be working with both Excel and Power BI. Why? Because the tools and concepts you'll be learning work in both places. So how do you know which one is right for the job?

We'll talk not only about that, but also how they can be used together in one solution. Come join us and revolutionize your reporting process!

## Target Audience


Anyone who needs to build reports based on data. Experience working with Excel PivotTables is highly encouraged. Experience with Power BI is optional.

## Software Requirements:

You must bring a laptop with both of the following installed:

- Excel 2016 or higher (Office 365 recommended)
- Power BI Desktop version 2.119.x (July 2023) or higher

## Notes on Software Requirements

1. Don't have Excel 2016 or higher? You can sign up for a free one-month trial of Office 365 Business Premium. ([Click here to learn more.](#))
2. If you are running Excel 2016, please go to Windows Update -> Advanced and make sure you've checked the box to receive updates for other products when you update Windows!
3. If you do not yet have Power BI Desktop installed, we recommend installing it from the Microsoft Store, as it stays up to date. To do this, press your  key, type "Store" and open the Microsoft Store App. Search for "Power BI Desktop" and choose to install it.
4. If you do have Power BI Desktop installed, but you are not automatically receiving updates, you can [get the most recent version of Power BI Desktop here.](#)
5. This course is taught on the Windows platform. Mac versions of Excel are not supported, and Power BI Desktop does not have a Mac version. (Running a Windows instance in a Fusion or Parallels is fine, but we cannot provide support to set this up, as we are not Mac users.)

## Time Commitment:

This course is a hands-on course and runs over 3 days. Each day will run approximately 7 hours in length, depending on the class size and attendees' experience in working with the tools.

## Part 1: Master Your Data

### Excel Pivot Table Review

- Pivot Compliant Data Sources
- Building Basic Pivot Tables
- Pivot Tricks Everyone Should Know

*Break - Coffee: 10 minutes*

### Importing Data with Power Query

- Individual CSV, text and Excel files
- Cleaning and manipulating data
- Refreshing imports
- Append data from multiple tables
- Appending a folder full of files

*Break - Lunch: 45 minutes*

### Merging Tables

- 7 ways to merge data
- Cartesian Products
- Approximate Matches

*Break - Coffee: 10 minutes*

### Data Transformation Recipes

- Recipes for unpivoting data
- Recipes for pivoting data
- Recipes for grouping data

### Conditional Logic

- Basic conditional columns
- Advanced conditional logic
- Creating columns from example

## Part 2: Building BI

### Getting Started with the Data Model

- Why do we need the Data Model?
- Creating table relationships
- Using the Data Model in Excel
- Filtering methods
- Sorting based on other columns

*Break - Coffee: 10 minutes*

### Introduction to Dimensional modelling

- Facts vs Dimensions
- Designing Fact and Dimension tables
- Supported Join Types
- Creating one to many dimensions
- Creating composite key joins

*Break - Lunch: 45 minutes*

### Laying a Dynamic Groundwork

- Power Query custom functions
- Using Parameter tables
- Building a dynamic model

*Break - Coffee: 10 minutes*

### Introduction to DAX formulas

- Creating basic DAX measures
- Understanding DAX calculation
- Understanding Filter Context

### Model Development Tips

- Design best practices
- Impact of Query Folding

## Part 3: DAX & Time Intelligence

### Calendar Tables

- Importance of Calendar dimensions
- Creating Calendar tables on the fly
- Power Query date functions

### Intermediate DAX

- The magic of CALCULATE()
- Understanding how CALCULATE works
- Removing filters with ALL()
- Conditional logic in DAX

*Break - Coffee: 10 minutes*

### Calendar Intelligent Measures

- Understanding DAX date functions
- Exploring the Golden Date Pattern
- Applying the Golden Date Pattern
- Creating calendar-safe date patterns

*Break - Lunch: 45 minutes*

### Dashboarding with Power BI

- Creating reports in Power BI
- Exploring Power BI visuals
- Publishing to the Power BI service
- Sharing in the Power BI service

*Break - Coffee: 10 minutes*

### Excel and Power BI – Better Together

- Which tool do you use and when?
- Porting Excel models to Power BI
- Analyzing Power BI models with Excel