



Tax Executives Institute Technology Boot Camp

AN INTRODUCTION TO
MICROSOFT GET & TRANSFORM

armanino 

The Armanino logo features the word 'armanino' in a bold, dark blue, lowercase sans-serif font. To the right of the text is a graphic element composed of three overlapping triangles: a light blue triangle at the top, a dark blue triangle at the bottom left, and a light green triangle at the bottom right.

Presenters:



Jeff Bogan – Managing Director

- 20 years of public accounting experience and the leader of Armanino's tax technology practice



Brandon Radlinger – Senior Associate

- 4 years of experience in public accounting with a strong emphasis in automation, data cleansing, and process standardization



Learning Objectives

Objective of Course:

- Provide an overview of the data life cycle and how it applies to tax processes and tax calculations.
- Describe the challenges faced by tax professionals in transforming data for tax purposes.
- Introduce Microsoft Get & Transform (aka Power Query) and demonstrate functionality.
- Gain “hands-on” experience with Get & Transform through a case study.

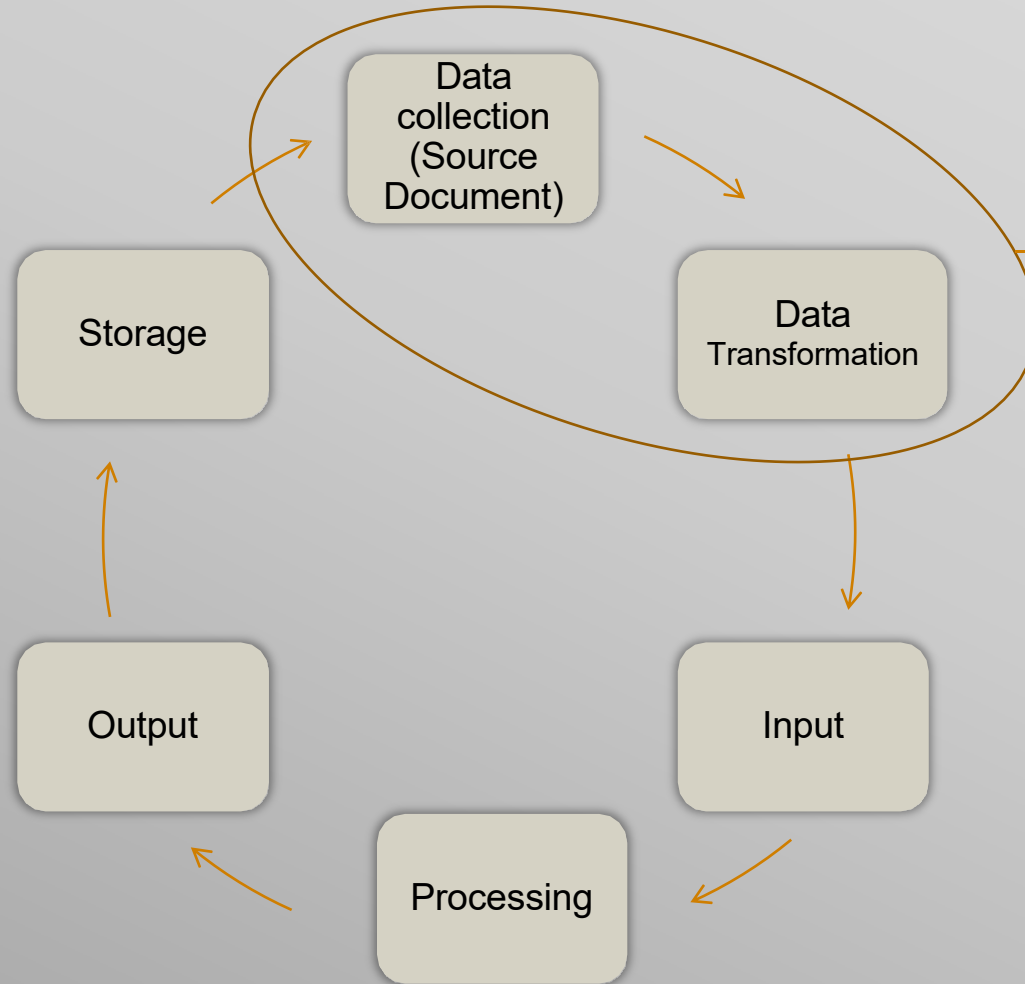


Agenda for Today

- The Data Life Cycle
- Overview of Get & Transform (Power Query)
- Case Studies
- Create Visualizations in PowerBI

PROCESS/DATA LIFE CYCLE

Input, Process, Output



Current State – 60% of time is spent on “Extract, Transform, Load (“ETL”)” activities – typically very low value tasks

Ideal Future State – 20% should be spent on ETL activities and 80% should be spent on analytics, review activities, planning, problem solving, and strategy, which are higher value activities

Applications such as Microsoft Get & Transform (Power Query) and Alteryx help us achieve the Ideal Future State by automating and creating efficiencies with ETL activities



MICROSOFT EXCEL

Get & Transform

- Get & Transform is a data-transformation tool housed within Microsoft Excel and Power BI
- Data often arrives in unstructured formats, which makes the ETL (extract, transform, and load) process a tedious process of manual workarounds
- Get & Transform speeds up the process by cleaning and organizing raw data through automation, which ultimately assists the analytical task of uncovering observations and trends

DOING IT RIGHT

What Is a Proper Data Set?

NOT Proper

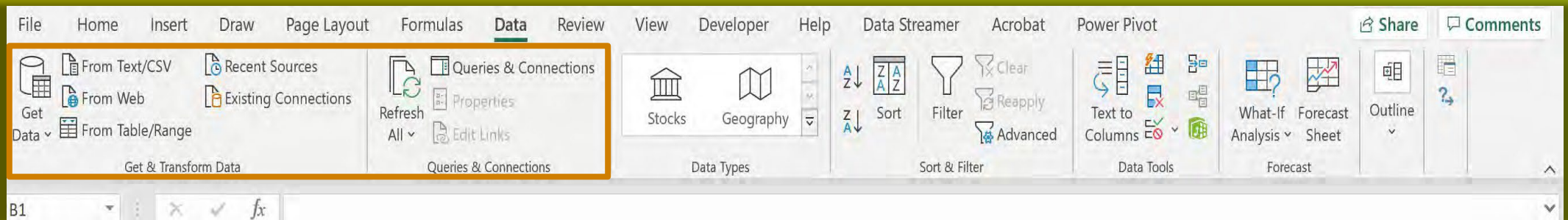
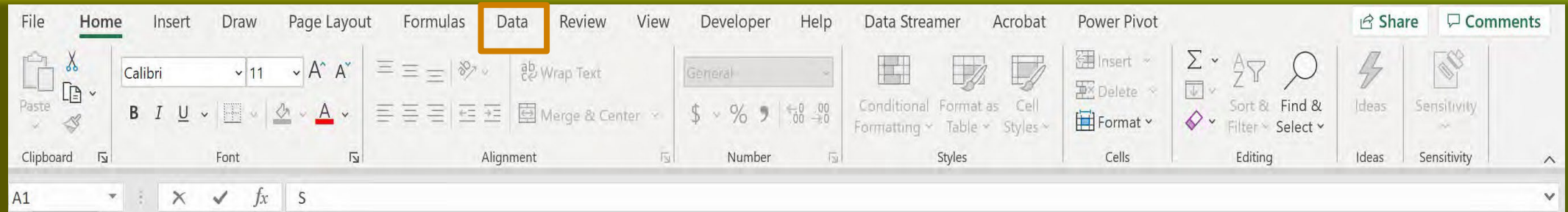
Division	Legal Entity	2020 Income Tax Expense	
101	Ross Corp	100000	
101	Rachel Corp	24000	
101	Joey Corp	12000	
101	Monica Corp	32000	
101	Phoebe Corp	15000	
101	Chandler Corp	21000	
	Subtotal	204000	
102	Cam Corp	3000	
102	Mitch Corp	1200	
102	Phil Corporation	32400	
102	Alex Corp	1200	
102	Manny Corp	1250	
102	Jay Corporation	3210	
	Subtotal	42260	
	Grand Total		246260
wihout Manny	245010		

Proper

Division	Legal Entity	2020 Income Tax Expense
101	Ross Corp	100000
101	Rachel Corp	24000
101	Joey Corp	12000
101	Monica Corp	32000
101	Phoebe Corp	15000
101	Chandler Corp	21000
102	Cam Corp	3000
102	Mitch Corp	1200
102	Phil Corporation	32400
102	Alex Corp	1200
102	Manny Corp	1250
102	Jay Corporation	3210

HOW TO

Locating Get & Transform Functions



Query Editing Tool Bars

The ribbon includes the following tool bars: Properties, Advanced Editor, Query, Manage Columns, Reduce Rows, Sort, Transform, Combine, Parameters, Data Sources, and New Query.

Query Name

Query Settings
Name: AxcelCorpDiv3PQ

APPLIED STEPS

- Changed Type
- Removed Top Rows
- Promoted Headers
- Changed Type1
- Removed Top Rows1
- Removed Other Columns
- Removed Blank Rows
- Filtered Rows
- Capitalized Each Word
- Replaced Value
- Replaced Value2
- Trimmed Text
- Trimmed Text1
- Cleaned Text
- Trimmed Text2
- Cleaned Text1
- Trimmed Text3
- Cleaned Text2
- Trimmed Text4
- Cleaned Text3
- Split Column by Character ...
- Removed Other Columns1
- Split Column by Character ...
- Removed Columns
- Renamed Columns

Formula Bar

Formula Bar: `= Table.RenameColumns(#"Removed Columns",{{"Jurisdiction Code.1", "Jurisdiction Code"}, {"Division Code.2",`

	Company ID	Company Name	Jurisdiction	Jurisdiction Code	Division Code	Pre Tax Bo
1	ID 116	Pentash Corporation	Japan	JC 03	3	
2	ID 117	Quatum Corporation	Ireland	JC 05	3	
3	ID 118	Magic Corporation	Canada	JC 02	3	
4	ID 119	Radius Corporaiton	Germany	JC 09	3	
5	ID 120	Signa Corporation	Singapore	JC 10	3	
6	ID 121	Titanium Corporation	Australia	JC 11	3	
7	ID 122	Univert Corporation	Singapore	JC 10	3	
8	ID 123	Vibriant Corporation	Australia	JC 11	3	
9	ID 124	Waker Corportion	Indonesia	JC 12	3	
10	ID 125	Xigba Corporation	US	JC 01	3	
11	ID 126	Zena Corporation	Mexico	JC 13	3	

Data Preview

Applied Steps

Power Query Editor

GET & TRANSFORM

Demo & Case Studies

Get & Transform Functions

- Manage Columns
- Reduce Rows
- Use First Row as Headers
- Replace Values
- Split Column
- Rename
- Clean
- Extract
- Close and Load



TABLE AND SLICER
Examples

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Power BI

Power BI is a standalone Microsoft business intelligence product, which includes both desktop and web-based applications for loading, modeling, and visualizing data

More information at powerbi.microsoft.com

MICROSOFT

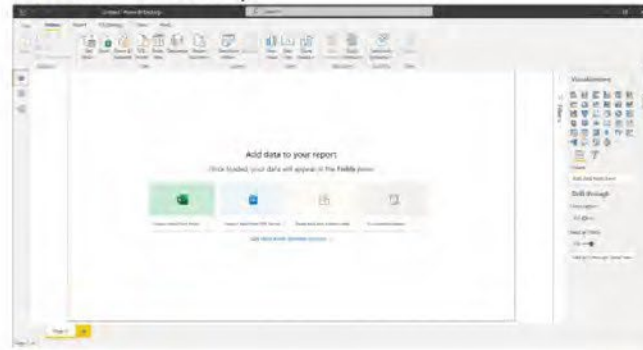
Power BI

- **Connect, transform, clean and analyze data**
 - *Access data from virtually anywhere (database tables, flat files, cloud services, folders, etc.), and create fully automated data shaping and loading (ETL) procedures*
- **Build relational models to blend data from multiple sources**
 - *Create table relationships to analyze information across a series of datasets*
- **Visualize data with interactive reports & dashboards**
 - *Build custom business intelligence tools with best-in-class visualization and dashboard features*
- **Define complex calculations using Data Analysis Expressions (DAX)**
 - *Enhance datasets and enable advanced analytics with powerful and portable DAX expressions*

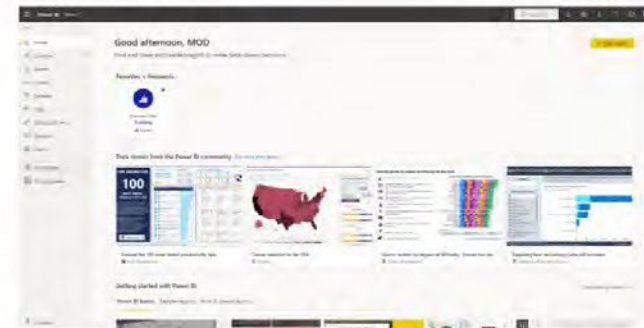
The parts of Power BI

Power BI consists of a Microsoft Windows desktop application called Power BI Desktop, an online SaaS (Software as a Service) service called the Power BI service, and mobile Power BI apps that are available on phones and tablets.

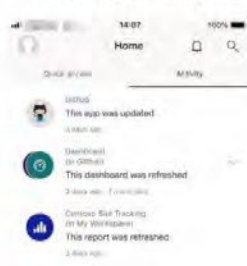
Power BI Desktop

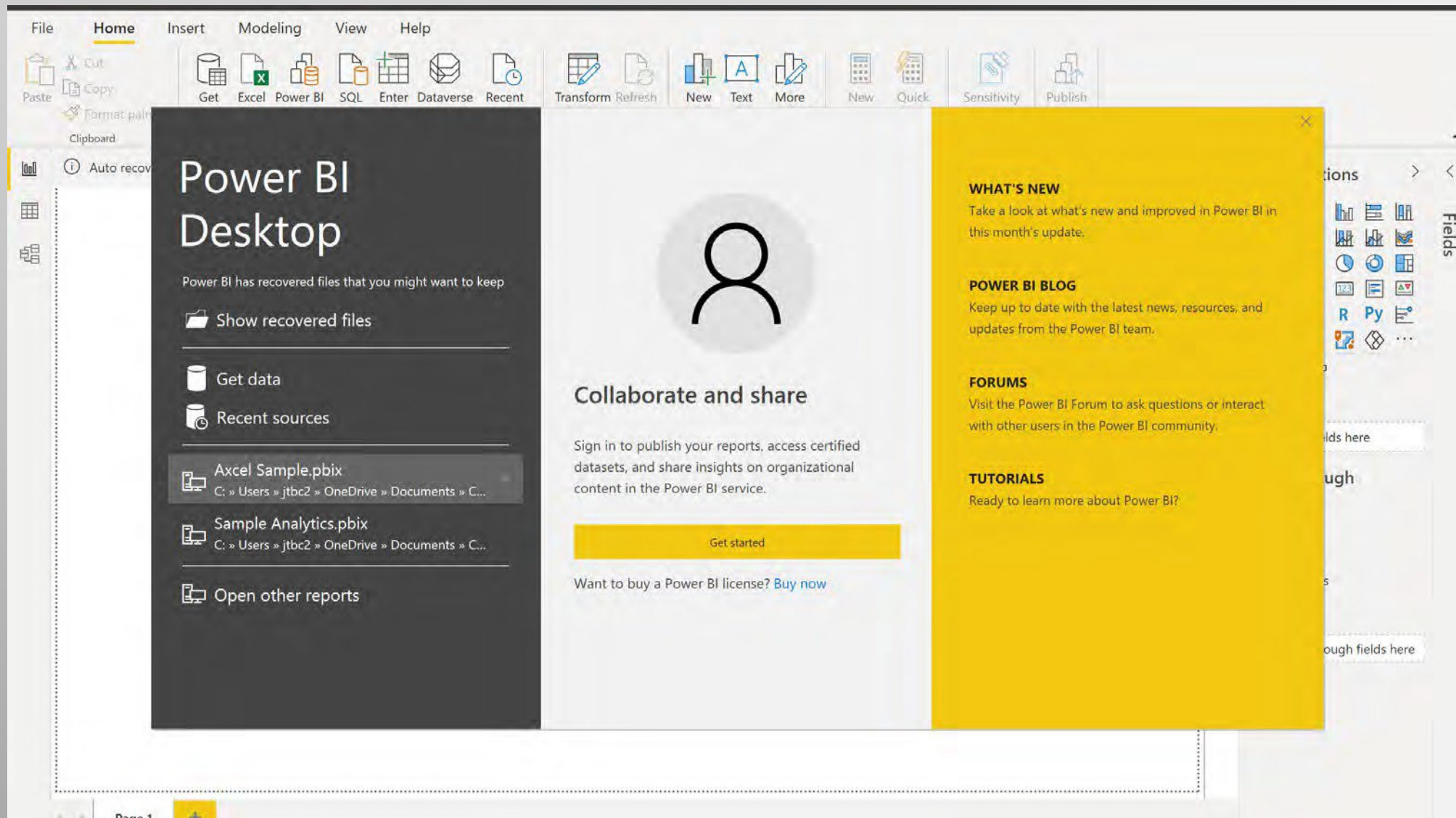


Power BI service

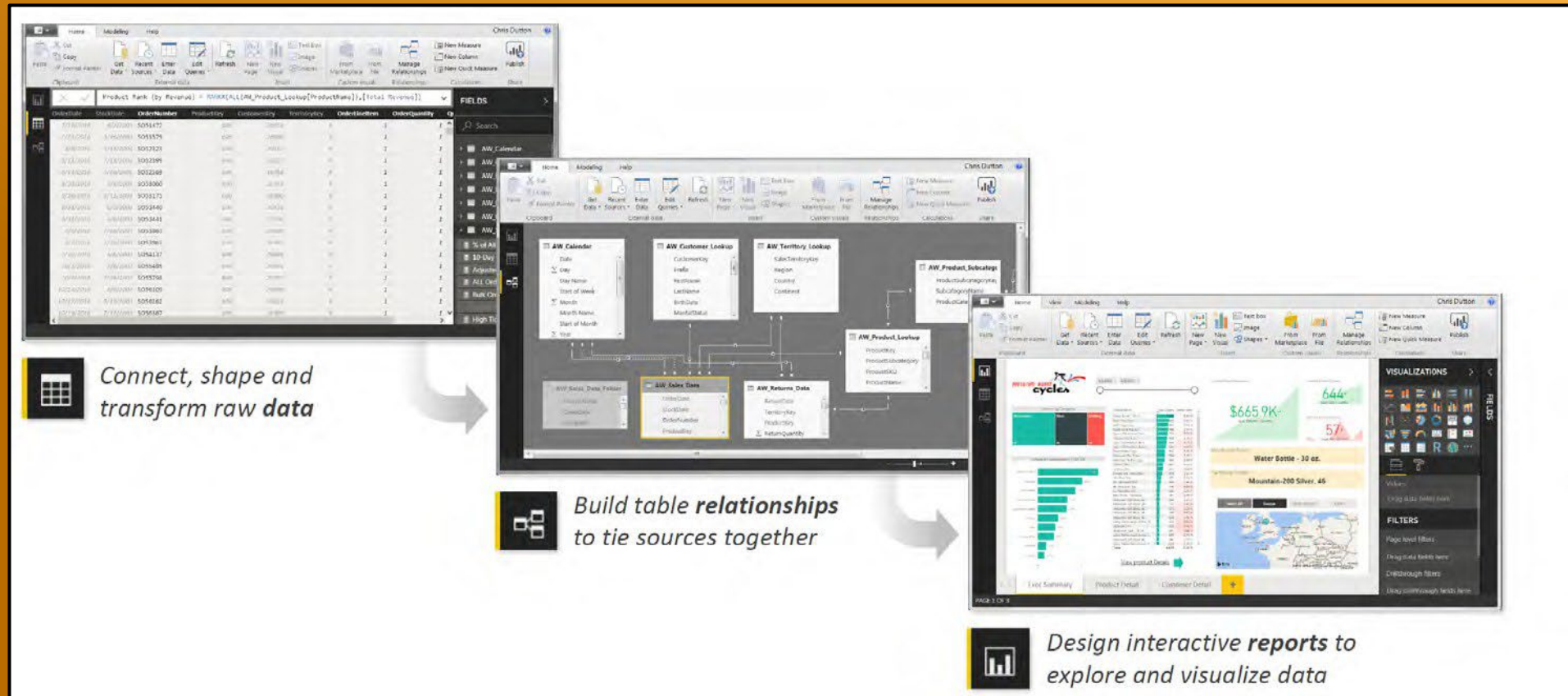


Power BI Mobile





POWER BI Workflow



Untitled - Power BI Desktop

Search

Sign in

File Home Help Table tools

Paste Copy Get data Excel Power BI datasets SQL Enter data Dataverse Recent sources Transform Refresh data Manage relationships New Quick New New measure measure column table Manage roles View as Publish

Clipboard Data Queries Relationships Calculations Security Share

Legal Entity Name	Division	Jurisdiction	2019 Taxable Income	2019 Tax Rate	2019 Tax Expense	2018 Tax Expense	Variance \$	Variance %
Alpha Corporation	Asia	Japan	11000	0.3	3300	3000	300	0.1
Beta Corporation	Asia	Japan	15500	0.3	4650	4500	150	0.0333333333333333
Ross Corp	LA	Argentina	1700	0.3	510	390	120	0.307692307692308
Zeta Corp	Asia	China	25000	0.25	6250	5500	750	0.136363636363636
Gamma Corp	Asia	China	12500	0.25	3125	3000	125	0.0416666666666667
Pivot Corp	LA	Brazil	4800	0.34	1632	1530	102	0.0666666666666668
Delta Corp	Asia	Indonesia	9000	0.25	2250	2000	250	0.125
Zebra Corp	NA	USA	12650	0.21	2656.5	2520	136.5	0.0541666666666667
Sigma Corp	NA	USA	18000	0.21	3780	2730	1050	0.384615384615385
Egna Corp	NA	USA	16000	0.21	3360	3150	210	0.0666666666666667
Chanlder Corp	NA	USA	12800	0.21	2688	2625	63	0.024
Monico Corp	EU	France	7000	0.31	2170	1980	190	0.095959595959596
Phoebe Corporation	EU	France	16000	0.31	4960	4290	670	0.156177156177156
Tri Corp	EU	Germany	29000	0.3	8700	8400	300	0.0357142857142857
Epsilon Corporation	Asia	Taiwan	11000	0.2	2200	2000	200	0.1
Falangie Corp	LA	Mexico	2600	0.3	780	720	60	0.0833333333333333
Break Corp	NA	Mexico	1700	0.3	510	450	60	0.133333333333333
Stella Corp	EU	Germany	38000	0.3	11400	10500	900	0.0857142857142857
Bing Corp	NA	USA	41000	0.21	8610	7980	630	0.0789473684210526
Geller Corp	EU	Spain	19000	0.25	4750	3500	1250	0.357142857142857
Pritchett Corporation	EU	France	21000	0.31	6510	7590	-1080	-0.142292490118577
Alex Corp	NA	USA	11000	0.21	2310	2730	-420	-0.153846153846154
Dunfee Corp	NA	USA	44000	0.21	9240	9450	-210	-0.0222222222222222
Phil Corp	EU	France	11000	0.31	3410	3960	-550	-0.138888888888889
Haley Corp	NA	USA	33000	0.21	6930	6720	210	0.03125
Special Corp	EU	Germany	16000	0.3	4800	3600	1200	0.333333333333333

Fields

Search

- 2018 Tax Expense GT
- 2018CorporateTaxRate ...
- 2018PTBI GT
- 2019 Tax Expense GT
- 2019CorporateTaxRate ...
- 2019PTBI GT
- Tax Expense Analysis

The screenshot displays the Microsoft Power BI Desktop interface. At the top, there is a navigation ribbon with icons for 'About', 'Guided learning', 'Training videos', 'Documentation', 'Support', 'Power BI blog', 'Community', 'Power BI for developers', 'Submit an idea', 'External Tools', 'Examples', and 'Consulting services'. Below the ribbon, the main workspace shows a data model with four tables:

- Axcel 2020 US GT**: Contains fields for 2020 Tax Expense, Comp. No., Company Name, Country, and Division.
- Axcel 2020 Foreign GT**: Contains fields for 2020 Tax Expense, Comp. No., Company Name, Country, and Division. This table is highlighted with a yellow border.
- Axcel Corp 2020 Com...**: Contains fields for 2020 Tax Expense, Comp. No., Company Name, Country, and Division.
- Axcel 2109 Global GT**: Contains fields for 2019 Tax Expense, Comp. No., Company Name, Country, and Division.

A relationship line connects 'Axcel Corp 2020 Com...' and 'Axcel 2109 Global GT' with a 1-to-1 cardinality. The right-hand pane shows the 'Fields' list with 'Axcel 2020 Foreign GT' selected. The 'Properties' pane on the far right shows the fields for the selected table: 2020 Tax Expense, Comp. No., Company Name, Country, and Division. At the bottom left, there is a button labeled 'All tables' with a plus sign.

File Home Insert Modeling View Help

Paste Copy Format Painter Get data Excel Power BI SQL Enter data Datasource Recent sources Transform Refresh data New visual Text box More visuals New measure Quick measure Sensitivity (preview) Publish

Clipboard Data Queries Insert Calculations Sensitivity Share

2018 Tax Expense by Division

Division	2018 Tax Expense
EU	~55K
NA	~40K
Asia	~25K
LA	~5K

2018 Tax Expense by Jurisdiction

Jurisdiction	2018 Tax Expense
USA	~40K
Germany	~25K
France	~18K
Switzerland	~12K
China	~8K
Japan	~7K
Spain	~4K
Australia	~3K
Indonesia	~2K
Japan	~1.5K
Brazil	~1.5K
Canada	~1.5K
Mexico	~1.5K
Argentina	~1.5K

2018 Tax Expense by Legal Entity Name

Legal Entity Name	2018 Tax Expense
Stella Corp	~10K
Dunbar Corp	~9K
Ti Corp	~8K
Bing Corp	~7.5K
Pincher Corporation	~7K
Milner Corp	~6.5K
Halley Corp	~6K
Gloria Corp	~5.5K
Zeta Corp	~5K
Beta Corporation	~4.5K
Pharbor Corporation	~4K
Phi Corp	~3.5K
Sigma Corp	~3.5K
Belle Corp	~3.5K
Egna Corp	~3.5K
Alpha Corporation	~3.5K
Gamma Corp	~3.5K
Alex Corp	~3.5K
Sigma Corp	~3.5K
Chandler Corp	~3.5K
Zebra Corp	~3.5K
Blauba Corp	~3.5K
Delta Corp	~3.5K
Epsilon Corporation	~3.5K
Menton Corp	~3.5K
Iamen Corp	~3.5K
Pivot Corp	~3.5K
Bigg Corp	~3.5K
Mitch Corporation	~3.5K
Falanga Corp	~3.5K
Break Corp	~3.5K
Ross Corp	~3.5K

Filters

Search

Filters on this page

Add data fields here

Filters on all pages

Add data fields here

Visualizations

Fields

Search

- Jurisdiction
- Legal Entity Na...
- 2018CorporateTaxRat...
- 2018PTBI GT
- 2019 Tax Expense GT
 - 2019 Tax Expense
 - 2019 Tax Rate
 - 2019Taxable Inc...
 - Division
 - Jurisdiction
 - Legal Entity Na...
- 2019CorporateTaxRat...
- 2019PTBI GT
- Tax Expense Analysis
 - 2018 Tax Expense
 - 2019 Tax Expense
 - 2019 Tax Rate
 - 2019Taxable Inc...
 - Division
 - Jurisdiction
 - Legal Entity Na...
 - Variance %
 - Variance \$

2018 Tax Expense 2018 Tax Expense 2 2018 Tax Expense 3 2019 Tax Expense Page 1

ENGAGE

Questions?

Armanino Operates in an Alternative Practice Structure:

“Armanino” is the brand name under which Armanino LLP, Armanino CPA LLP, and Armanino Advisory LLC, independently owned entities, provide professional services in an alternative practice structure in accordance with law, regulations, and professional standards. Armanino LLP and Armanino CPA LLP are licensed independent CPA firms that provide attest services, and Armanino Advisory LLC and its subsidiary entities provide tax, advisory, and business consulting services. Armanino Advisory LLC and its subsidiary entities are not licensed CPA firms.