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YOUR SOURCE FOR KEY UPDATES & INSIGHTS ON TIMELY ISSUES

HIGHLIGHTED TOPICS:

ASK THE EXPERTS

Get your burning questions answered by leading experts on all things related to CPA technology

MICROSOFT 365: SUPERCHARGING CPA PRODUCTIVITY

Uncover the hidden gems of Microsoft 365 to elevate your productivity and streamline your processes

SMART TECH, SOUND JUDGMENT: NAVIGATING AI RESPONSIBLY

Learn how to balance innovation with ethical obligations to maintain trust and integrity

THURSDAY, DEC. 4 | WICPA OFFICE & WICPA CPE LIVESTREAM

MATERIALS AT A GLANCE

The following materials are from the afternoon sessions of the 2025 WICPA Accounting Technology Conference held on Thursday, Dec. 4, including:

- From Numbers to Narratives: Mastering Data Analysis for CPAs
- Power BI in Practice: Building End-to-End Analytics Solutions
- Ask the Experts: Panel Discussion on Emerging Technologies

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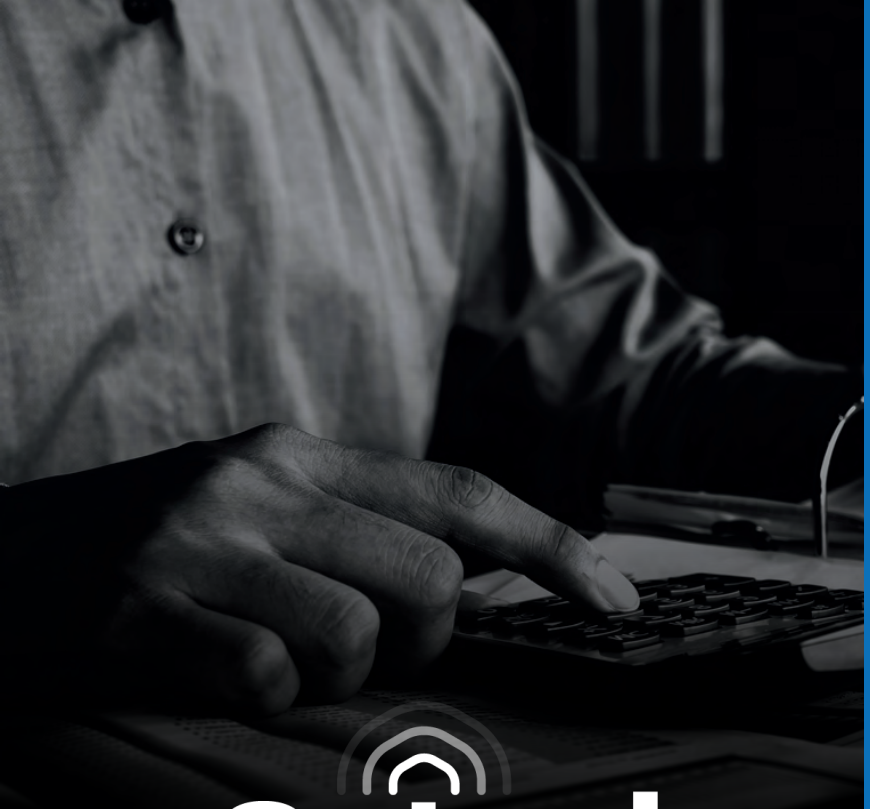

CYBER THREATS ARE INCREASING EVERY DAY.

75%

of accounting firms believe they would only be able to survive **three to seven days** after a ransomware attack.

Source: www.cpapracticeadvisor.com

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75%

of accounting firms believe they would only be able to survive **three to seven days** after a ransomware attack.

Source: www.cpapracticeadvisor.com

CPA firms are increasingly targeted due to their access to sensitive financial information. Since 2014 reported data breaches of CPA firms have increased **over 80%** with ransomware extortion incidents rising to **over 40%** since 2018.

Choosing Ontech to manage your CPA firm's IT & protect your data can offer several advantages:

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- **Proactive Monitoring and Support:** We provide continuous monitoring to detect & respond to potential threats quickly. This proactive approach minimizes downtime and keeps your operations running smoothly.
- **Customized Solutions:** Our team offers tailored IT solutions to meet the specific needs of CPA firms. This includes secure cloud services, data backup and recovery, and network management.
- **Training and Awareness:** They also provide training for your staff to recognize and respond to cyber threats, enhancing your firm's overall security posture.

Our tailored solutions, transparent billing, and commitment to minimizing technical issues make it an ideal choice for CPA's and accountants. Let us help safeguard your critical data!

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FTC SAFEGUARD CHECKLIST

WHO'S AFFECTED & WHAT'S REQUIRED

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The **FTC Safeguards Rule** applies to **"financial institutions"**, including:

- *Car Dealerships*
- *Retailers*
- *Tax Preparers*
- *Accounting Firms*
- *Loan Companies*
- *Any Business **Collecting Financial Data!***

Here's What's Required To Stay Compliant:

- ☐ **Designate a Qualified Individual**
  Assign someone **(internal or outsourced)** to be responsible for your information security program.
- ☐ **Conduct a Risk Assessment**
  Identify internal and external risks to customer data. This is ongoing, **not a one-time event!**
- ☐ **Train Your Team**
  Security is everyone's responsibility, so your employees need ongoing training on data protection and phishing awareness. **We can help with this!**
- ☐ **Monitor Your Service Providers**
  If you outsource IT, payroll, marketing, or data processing, **those vendors must also comply.**
- ☐ **Keep It Updated**
  Regularly review and **adjust** your security program as your business or threats evolve.
- ☐ **Implement Safeguards**
  Based on your risk assessment, put the right controls in place. **These typically include:**
  - Access controls (who can access what, and why)
  - Encryption of customer data
  - Multi-Factor Authentication (MFA)
  - Secure data disposal policies
  - Logging and monitoring access and activity
- ☐ **Create an Incident Response Plan**
  Be ready with a plan if **(or when)** a data breach occurs. The FTC expects a **structured response strategy.**

Why It Matters: *Non-compliance can lead to:*

- ☒ Hefty fines
- ☒ Damaged reputation
- ☒ Loss of trust with customers

Luckily, we help local businesses like yours **navigate FTC requirements with confidence!**

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Wisconsin Institute of Certified Public Accountants

From Numbers to Narratives: Mastering Data Analysis for CPAs

Developed by Bryan L. Smith, CPA.CITP, CISA

In Waukesha, WI on December 4, 2025, 1:00-2:00pm

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Bryan L. Smith, CPA.CITP, CISA

- Owner DataSmithPro, LLC
- Co-founder of CPA Crossings, LLC
- Strategic technology advisor to CPAs w/ 40+ years of experience
- Nationally recognized author and presenter on CPA technology
- Extensive knowledge and experience in proper Excel design techniques as well as helping CPAs build spreadsheets that are accurate
- As a Certified Information Systems Auditor (CISA), spent a considerable amount of time auditing and validating thousands of Excel spreadsheets
- Developed various data analysis and Microsoft Power BI courses and has worked with multiple organizations to train and coach staff on proper data analysis techniques
- Masters of Science in Information Assurance (MSIA)

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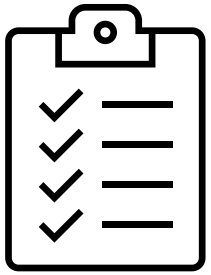
Presentation Outline

Click links to navigate to specific section ---------- >



- The Evolving Role of CPAs in a Data-Driven World
- Why Data Analysis Matters for CPAs
- Key Data Analysis Skills and Concepts for CPAs
- Leveraging Microsoft 365 Tools for Data Analysis
- Building a Data Analytics Mindset
- Wrap-Up

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The Evolving Role of CPAs in a Data-Driven World

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The Profession at a Crossroads

- Traditional role: compliance, audit, tax preparation, historical financial reporting
- Emerging role: providing insights, analyzing trends, strategic forecasting, risk management
- Automation and AI are replacing repetitive compliance tasks
- Clients, employers, and regulators expect real-time, forward-looking insights
- CPA firms and corporate teams must evolve to remain relevant and competitive

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Shifting Expectations for Accounting Professionals

Beyond Standard Reporting

CPAs are expected to deliver actionable insights, not just traditional financial reports.

Data Trend Analysis

Analyzing financial data trends helps organizations anticipate changes and opportunities.

Strategic Decision Support

CPAs assist in forecasting and strategic decision-making to drive business growth.

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From Compliance to Strategic Advisory

Evolving CPA Role

CPAs are transitioning from traditional compliance roles to broader strategic advisory positions within businesses.

Data Interpretation

CPAs utilize data analysis to provide insights that support business decision-making and strategy development.

Strategic Business Guidance

By advising on performance improvements, CPAs help businesses achieve sustainable growth and competitive advantage.

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Compliance vs Advisory

Old World:

Static reports, manual reconciliations, backward-looking financials.

New World:

Refreshable dashboards, predictive insights, and proactive recommendations.

Compliance answers **'What happened?'**

Analytics and advisory answer **'Why did it happen?' and 'What should we do about it?'**

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The Rise of Data Analytics in the Profession

Integration in Accounting

Data analytics tools are now embedded within accounting workflows for enhanced efficiency and accuracy.

Detailed Financial Analysis

Advanced analytics enable accountants to generate more detailed and actionable financial insights.

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Increasing Client Expectations in a Digital Era

Demand for Speed

Clients expect rapid delivery of financial reports and real-time insights to make timely decisions.

Accuracy and Insight

Clients require precise financial data combined with deeper analytical insights for better business understanding.

Technology Utilization

CPAs are expected to use advanced technology and data analytics tools to meet client expectations efficiently.

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The Impact of Automation and Artificial Intelligence on Traditional Tasks

Transformation of Traditional Tasks

Automation and AI are revolutionizing traditional accounting by streamlining routine tasks and improving efficiency.

Reduction of Manual Work

AI reduces the time spent on manual data entry, allowing accountants to minimize errors and increase productivity.

Focus on Strategic Planning

With automation handling routine tasks, CPAs can focus on data analysis and strategic business planning for better decision making.

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Why Data Analysis Matters for CPAs

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Why Data Analysis Matters

For Students/Staff:	Builds a competitive edge in the job market and career progression
For Managers:	Enables efficiency gains, smarter resource allocation, and better supervision
For Directors/Partners:	Drives growth, new revenue streams, and differentiates client services
For all levels:	Mastering analytics increases impact, relevance, and long-term career security

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Enhancing Client Advisory Services

Role of Data Analysis

Data analysis helps CPAs understand client needs deeply for personalized financial advice

Tailored Client Advice

CPAs use insights from data to offer advice aligned with clients' unique financial goals

Informed Decision Making

Data-driven advice empowers clients to make better financial decisions confidently

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Mitigating Risks and Improving Decision-Making

Trend Analysis for Risk

Analyzing trends helps identify potential risks early, allowing proactive risk management.

Anomaly Detection Impact

Detecting anomalies supports recognizing unusual patterns that could indicate risks or opportunities.

Enhanced Decision-Making

Data-driven insights empower CPAs to make informed, strategic decisions for organizational success.

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Storytelling with Data

Framework:

Metric → Driver → Meaning → Action

Example: Revenue dropped 6% → Identify key product line → Explain the risk → Recommend action

The narrative is what decision-makers value – **not just the raw number**

Effective storytelling **transforms accountants** from **reporters to trusted advisors**

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Examples of Data Stories

AR Aging:

AR >90 days rising → Cash flow risk → Recommend collection strategy

Expense Spike:

Travel costs surge → Operational driver (new project) → Adjust budgets

Margin Analysis:

Client A less profitable → Product/service mix issue → Recommend pricing or product focus

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Why Compliance Work Is No Longer Enough

Limitations of Compliance

Compliance work focuses on meeting regulatory requirements but often lacks strategic business insights

Need for Deeper Analysis

CPAs must analyze financial data beyond compliance to uncover trends and opportunities for clients

Forward-Looking Insights

Providing predictive insights helps clients plan effectively and adds significant business value

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Advisory Opportunities: From Insights to Actionable Recommendations

Transforming Data into Insights

Data analytics converts raw figures into meaningful insights for strategic decision-making.

Proactive Recommendations

CPAs use insights to provide proactive advice that drives business growth and operational efficiency.

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Competitive Edge: Standing Out in the Accounting Industry

Enhancing Advisory Capabilities

Mastering data analysis allows CPAs to provide deeper insights and valuable business advice to clients

Increasing Marketability

Data analysis skills boost a CPA's marketability by meeting modern business demands and expectations

Strategic Business Partner

CPAs with strong data analysis are seen as key strategic partners in business decision-making processes

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Key Data Analysis Skills and Concepts for CPAs

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Understanding Basic Data Analytics Principles

Data Types Overview

Understanding different data types helps categorize and organize data correctly for analysis

Statistical Measures

Statistical measures summarize data distributions effectively

Visualization Techniques

Data visualization techniques help present data clearly, enhancing interpretation and decision-making

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Identifying and Interpreting Relevant Data

Data Relevance Assessment

CPAs identify data sets that directly address specific business questions for effective analysis

Actionable Insights Extraction

Analyzing relevant data helps CPAs generate insights that support informed business decisions

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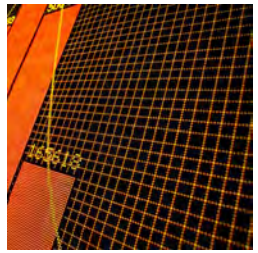
Transforming Raw Data Into Actionable Narratives

Data Storytelling Importance

Storytelling techniques help translate complex data into understandable and engaging narratives for stakeholders.



Visualization Techniques

Visualizations like charts and graphs aid in illustrating key insights clearly and effectively.

Driving Actionable Insights

Clear communication of data insights enables informed decision-making and stakeholder action.

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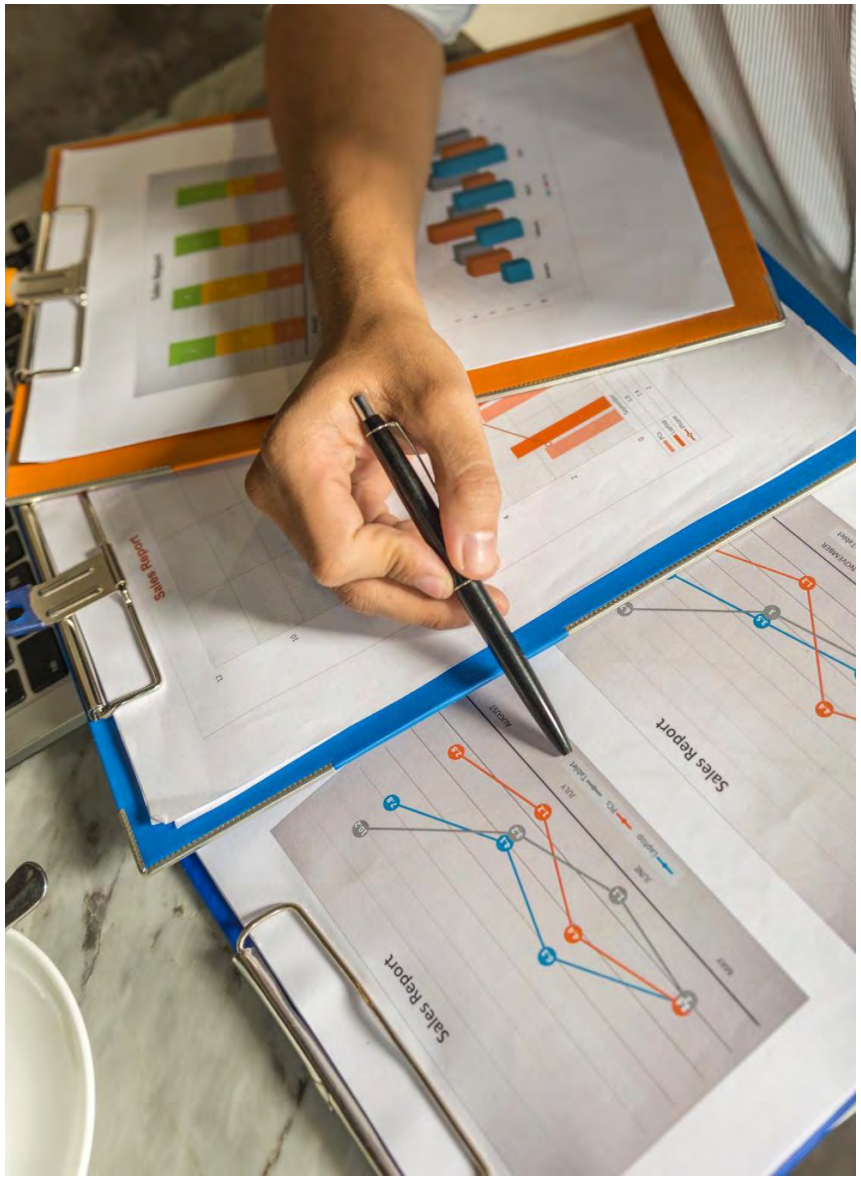

Critical Thinking and Analytical Reasoning

Importance of Critical Thinking

Critical thinking helps CPAs analyze data deeply and identify underlying patterns and relationships.

Analytical Reasoning Skills

Analytical reasoning enables CPAs to interpret complex datasets accurately for strategic financial insights.

Better Financial Decisions

These skills empower CPAs to make informed decisions that benefit clients and organizations strategically.

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Effective Data Visualization Techniques

Importance of Clear Data Presentation

Clear presentation of data helps CPAs effectively communicate insights to stakeholders and supports better understanding.

Mastering Visualization Tools

Proficiency in tools like Power BI and Excel enables CPAs to create detailed and interactive visual reports.

Supporting Decision-Making

Well-designed visualizations make complex data easier to understand, facilitating data-driven decisions.

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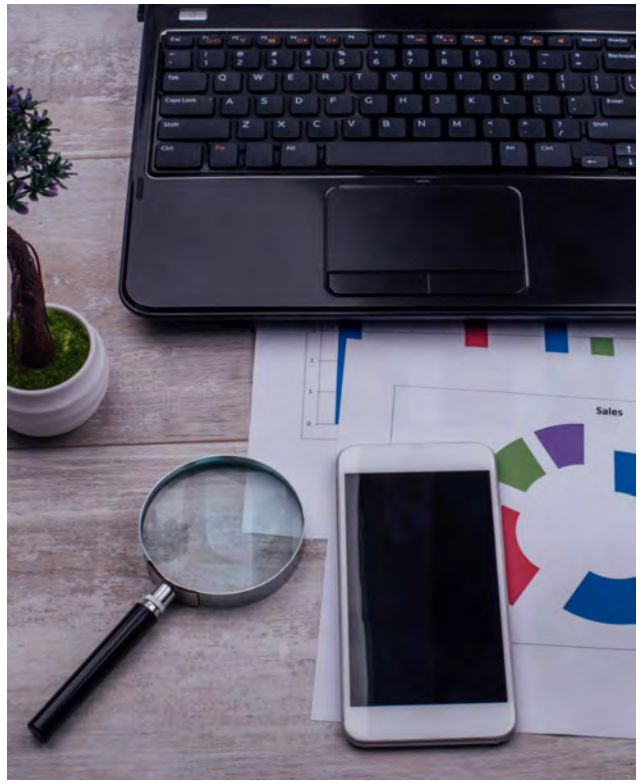
Understanding Data Governance and Integrity



Data Accuracy and Consistency

Ensuring data is accurate and consistent is essential for reliable financial analysis and reporting.

Data Security Importance

Protecting data security builds trust and meets regulatory compliance for CPAs and clients.

Governance Principles Awareness

Understanding data governance principles guides proper management and integrity of financial data.

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Leveraging Microsoft 365 Tools for Data Analysis

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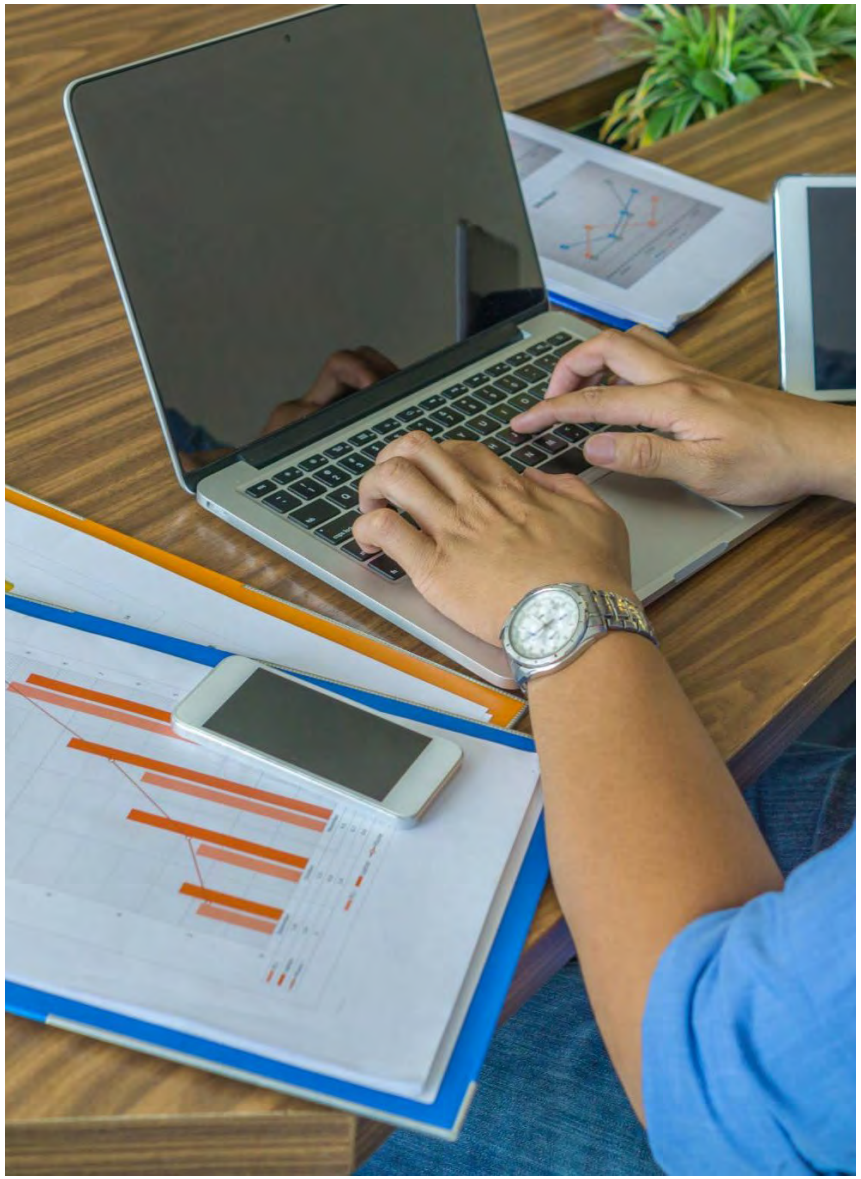

Essential Data Skills for CPAs

Financial Data Analysis

CPAs must interpret financial data and identify trends to support accurate decision-making and business insights.

Data Visualization Mastery

Understanding and creating visuals makes complex data more accessible and supports communication of financial findings.

Digital Tools Proficiency

Familiarity with digital tools like Excel and audit software increases efficiency and accuracy in data analysis tasks.

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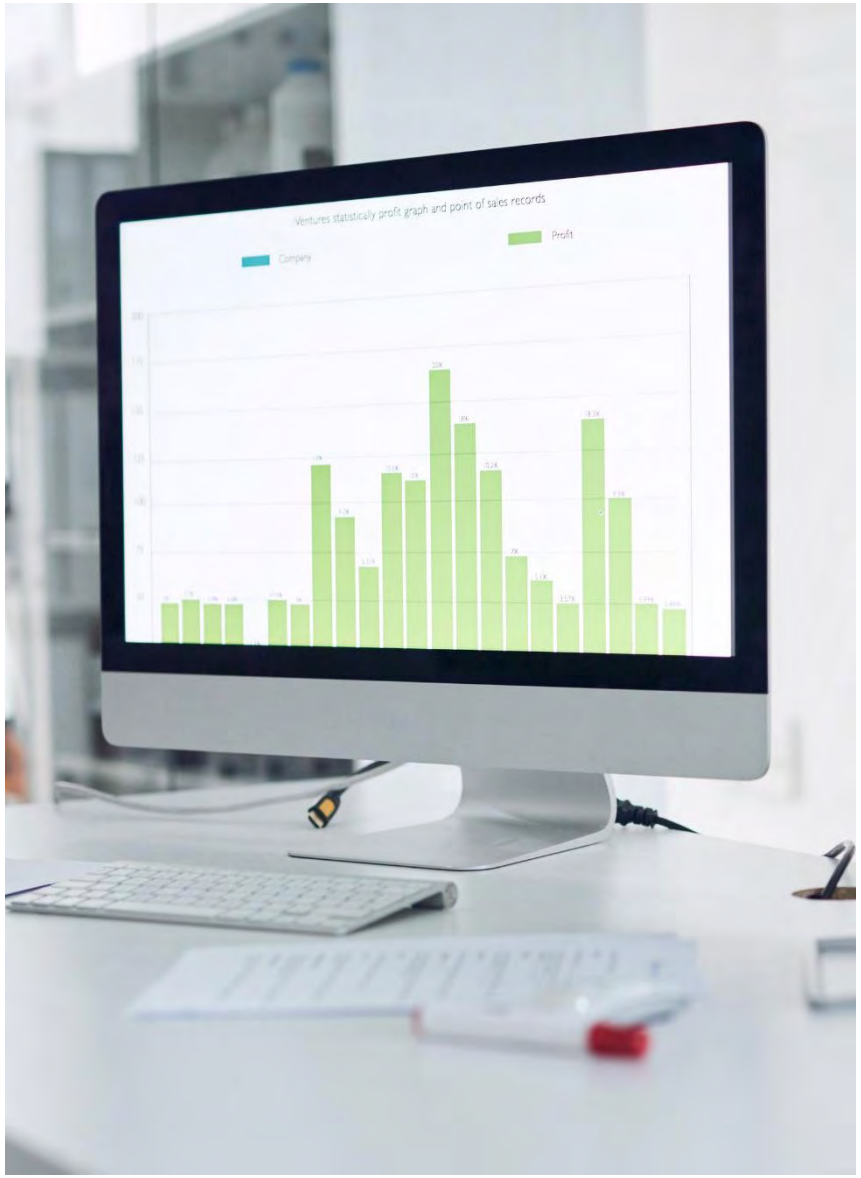

Utilizing Excel for Data Modeling and Visualization

Advanced Excel Functions

Excel offers advanced functions that help CPAs perform complex calculations and data analysis efficiently.

Pivot Tables

Pivot tables enable dynamic summarization and organization of large datasets for insightful reporting.

Charting Tools

Excel's charting tools allow effective visualization of data trends and comparisons through various graph types.

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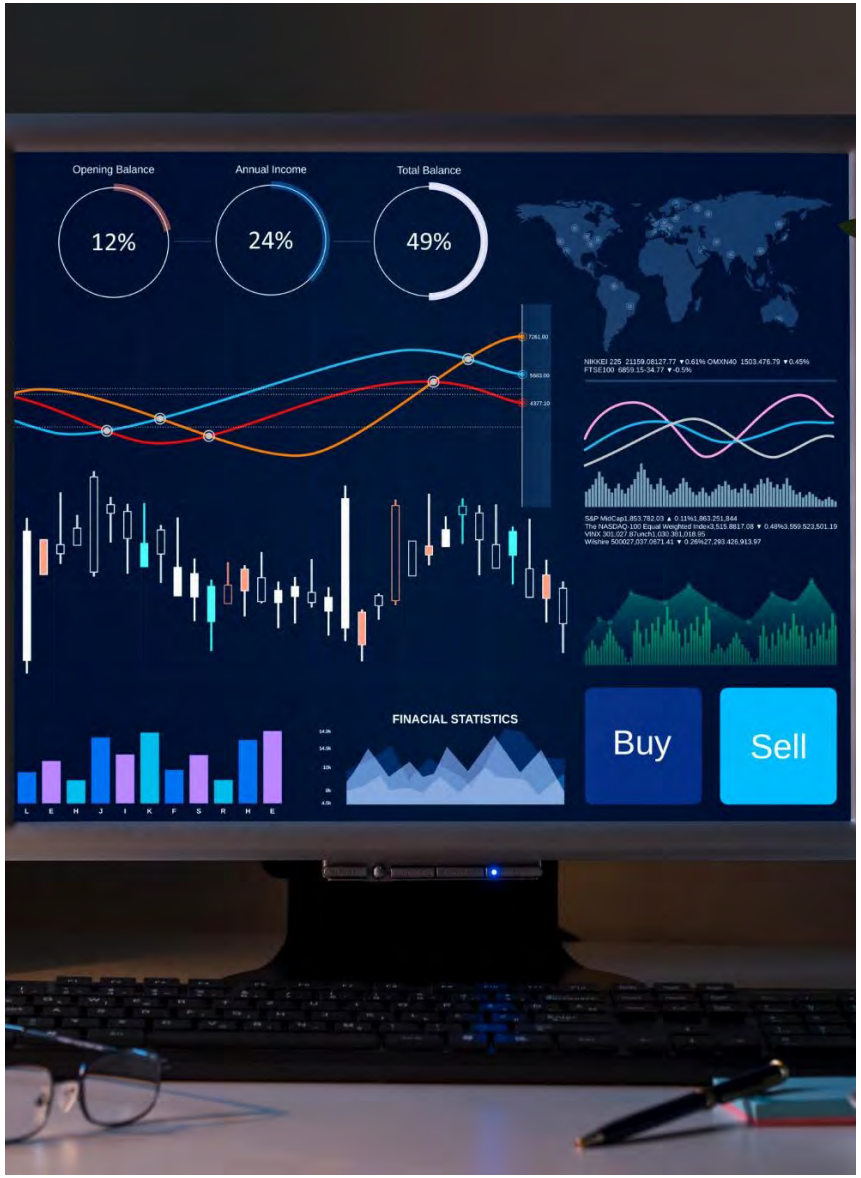

Collaborating with Power BI for Advanced Analytics

Interactive Dashboards

Power BI enables creation of interactive dashboards that visualize data dynamically and intuitively.

Real-Time Data Updates

Power BI supports real-time data updates, ensuring the latest information is always available for analysis.

Advanced Analytics Insights

Advanced analytics in Power BI provide deeper insights to support better decision-making.

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Microsoft 365 Toolkit

- **Excel**: The foundation for most accountants; dynamic arrays, data models, and pivot tables extend its power.
- **Power Query**: Automates repetitive data preparation tasks such as cleaning, transforming, and combining files.
- **Power BI**: Creates dynamic dashboards and interactive visualizations to tell compelling stories.
- **OneDrive/SharePoint/Teams**: Cloud-based collaboration, version control, and secure file sharing.
- **Power Automate**: Sets up workflows and alerts, eliminating manual tasks.

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Overview and Integration of Microsoft Excel, Power Query, and Power Pivot

Excel as Analysis Platform

Excel offers a familiar interface for data organization, enabling CPAs to perform efficient analysis.

Power Query for Data Cleaning

Power Query simplifies data cleaning and transformation, ensuring accurate and usable data for analysis.

Power Pivot for Data Modeling

Power Pivot enables complex data modeling and relationship management to uncover deeper insights.

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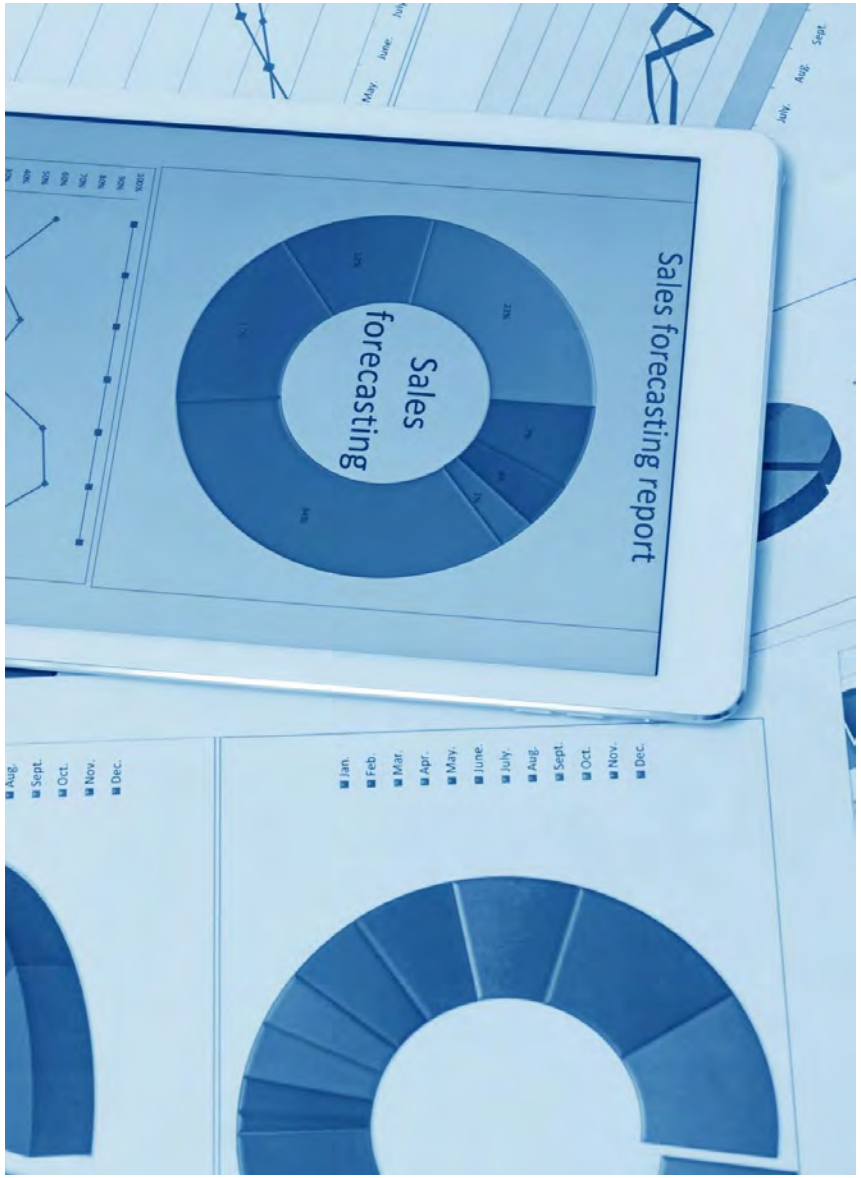

Introduction to Microsoft Power BI and Its Significance

Interactive Data Visualization

Power BI allows creation of interactive visual reports that help users explore data dynamically.

Empowering CPAs

Power BI empowers CPAs to generate insightful dashboards for clear communication with stakeholders.

Clear Communication of Complex Data

Power BI simplifies complex data, making reports easy to understand for all stakeholders.

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Using Teams and SharePoint for Collaboration and Data Sharing

Seamless Collaboration

Teams and SharePoint enable smooth collaboration among accounting teams for effective communication.

Real-Time Data Sharing

Real-time sharing of data, reports, and insights improves decision making and productivity.

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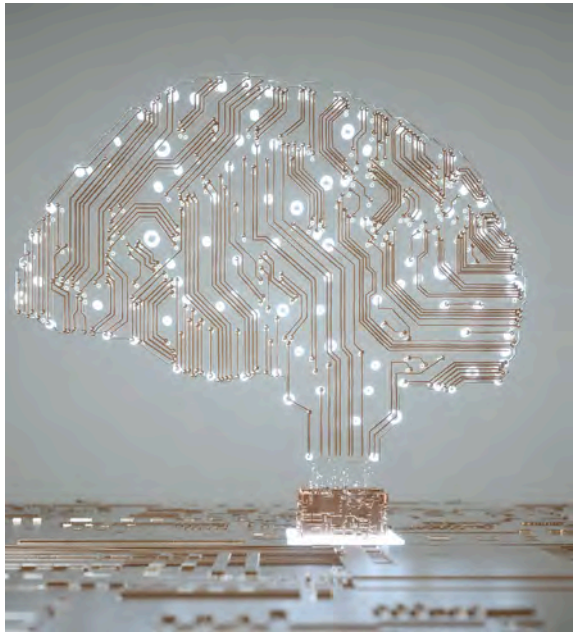
Building a Data Analytics Mindset



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Developing a Growth Mindset for Continuous Learning

Embrace Ongoing Education

Continuous learning enables CPAs to stay updated with new tools and evolving industry knowledge

Stay Curious and Adapt

Curiosity drives exploration of innovative techniques and helps adapt to changing data environments

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Integrating Data Analytics Into Daily Accounting Practice

Improved Accuracy

Data analytics reduces errors and enhances precision in accounting tasks for more reliable results

Enhanced Efficiency

Routine workflows become faster and more streamlined by integrating data analysis tools

Strategic Value Delivery

CPAs leverage data insights to provide valuable strategic advice to clients and organizations

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Analytics Maturity Path

Awareness: Know that tools and capabilities exist beyond traditional Excel

Efficiency: Staff automate repetitive processes using Power Query and modern Excel features

Insight: Analytics provides deeper understanding of performance drivers and trends

Advisory: Accountants provide forward-looking guidance and recommendations based on data models

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Building the Mindset

Staff	Learn and experiment with tools like Power Query and Power BI
Managers	Encourage staff development and allocate time for training
Leaders	Invest in analytics strategy, infrastructure, and culture
Everyone	Strive to move up the value chain from compliance to advisory

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The Value of Mastering Power BI for CPAs

Data Transformation Skills

Mastering Power BI enables CPAs to convert complex raw data into clear, actionable insights

Visual Storytelling

Power BI helps CPAs create compelling visual stories that communicate data effectively to stakeholders

Influencing Business Strategy

CPAs use data insights from Power BI to guide strategic decisions and improve client advising

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Basic Steps to Get Started with Data Analytics in Microsoft 365

Understand Data Sources

Begin by identifying and comprehending various data sources available within Microsoft 365 environments to analyze

Practice with Excel and Power BI

Use Excel and Power BI tools to manipulate data, create visualizations, and gain practical analytics experience

Build Skills Through Projects

Enhance analytics capabilities by working on hands-on projects that apply learned concepts progressively

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Transforming Financial Reporting with Interactive Dashboards

Real-time Data Updates

Interactive dashboards provide real-time financial data updates for timely decision making.

Enhanced Data Accessibility

Dashboards make complex financial data accessible and easy to understand for all users.

Dynamic Financial Visualization

Dynamic visualizations simplify financial reporting by highlighting key metrics clearly.

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Common Obstacles in Adopting Data Analytics

Resistance to Change

Resistance to organizational change can slow the adoption of data analytics despite its benefits.

Data Quality Issues

Poor data quality undermines analytics efforts and leads to unreliable insights.

Skills Gap

Lack of skilled personnel limits effective use and adoption of analytics technologies.

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Wrap-Up

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Conclusion

Empowering CPAs

Mastering data analysis enables CPAs to convert raw numbers into insightful business narratives effectively.

Mastering data analysis tools empowers CPAs to excel in the changing accounting environment.

Strategic Advisory Role

This skill transformation positions CPAs as key strategic advisors in today's data-driven business environment.

Enhanced Advisory Services

Data analysis enhances advisory services, enabling CPAs to provide greater client value.

Continuous Skill Development

Ongoing learning and using modern analytical tools are essential for CPAs to maintain success and relevance.

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Tools at Your Fingertips

- **Excel**: The foundation for most accountants; dynamic arrays, data models, and pivot tables extend its power.
- **Power Query**: Automates repetitive data preparation tasks such as cleaning, transforming, and combining files.
- **Power BI**: Creates dynamic dashboards and interactive visualizations to tell compelling stories.
- **OneDrive/SharePoint/Teams**: Cloud-based collaboration, version control, and secure file sharing.
- **Power Automate**: Sets up workflows and alerts, eliminating manual tasks.

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Call to Action

Students/Staff

Start learning advanced Excel, Power Query, and Power BI now.

Managers

Promote and support staff analytics training and experimentation.

Leaders

Make analytics a strategic priority within firms and corporations.

Remember

Analytics is not optional – it's essential for future relevance of the profession.

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Questions?

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Thank You!!

Bryan L. Smith, CPA.CITP, CISA

bsmith@datasmithpro.com

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ONE FINAL NOTE

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Wisconsin Institute of Certified Public Accountants

Power BI in Practice: Building End-to-End Analytics Solutions

Developed by Bryan L. Smith, CPA.CITP, CISA

In Waukesha, WI on December 4, 2025, 2:15-3:30pm

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Bryan L. Smith, CPA.CITP, CISA

- Owner DataSmithPro, LLC
- Co-founder of CPA Crossings, LLC
- Strategic technology advisor to CPAs w/ 40+ years of experience
- Nationally recognized author and presenter on CPA technology
- Extensive knowledge and experience in proper Excel design techniques as well as helping CPAs build spreadsheets that are accurate
- As a Certified Information Systems Auditor (CISA), spent a considerable amount of time auditing and validating thousands of Excel spreadsheets
- Developed various data analysis and Microsoft Power BI courses and has worked with multiple organizations to train and coach staff on proper data analysis techniques
- Masters of Science in Information Assurance (MSIA)

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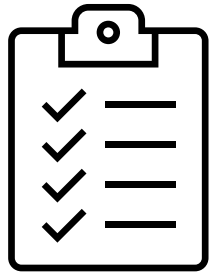
Presentation Outline

Click links to navigate to specific section ---------- >



- Power BI Workflow
- What's Next After Creating a Data Model
- Best Practices for Performance Optimization
- Leveraging Your Data Model Through PowerBI.com
- Wrap-Up

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The slides in this presentation contain many screenshots of Excel and the Power BI applications in order to demonstrate particular features and functionality. These screenshots were taken during the development of this course. However, Microsoft updates the apps regularly and it becomes difficult to constantly update the screenshots. Therefore, please note that screenshots may vary from your actual version, but the overall functionality remains the same.

Note About Screen Shots

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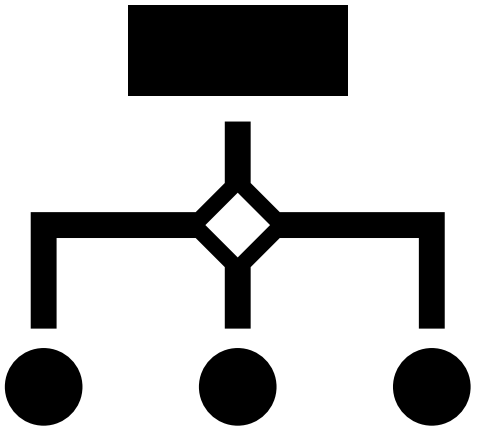
Power BI Workflow



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Data Analysis Process Flow

Reality

Automation & Maintenance

Collect Raw Data

Process Data

Clean Data

Exploratory Data Analysis

Build Data Model & Measures

Performance Optimization

Share Data Product

Communicate/ Visualize Report

Make Insightful Decisions

Data science process flowchart from "Doing Data Science", Cathy O'Neil and Rachel Schutt, 2013

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Reality

- Your Organization
- People performing various activities
- Activities generate data
- No two organizations have identical data
- Determine your organization's data

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Collect Raw Data

Collect Raw Data

Build “pipelines” to your data

- Data connectors
- Files (Excel, csv, text, report, databases)

Where is it?

How do we get it?

Is it complete?

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Process Data

- Data is processed through the pipelines
- Wherever possible automate this
- Many tools on the market to help with this
- Different tools for different data
- Sometimes left to the technical staff

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Clean Data

Clean Data

Get data into a suitable format

May have several data tables

- Sales, customers, products, sales person

Filter, extract, combine, merge, eliminate, match, etc.

Create calculated columns for missing data

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Exploratory Data Analysis

Do you have the right data for what you want to know?

Is our data clean?

- Duplicates, missing values, absurd outliers, incorrect, etc.

Garbage In, Garbage Out

May need to go back to previous steps

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Build Data Model & Measures

Build Data Model & Measures

Put the raw data into a useable form

Connect tables through relationships

Allows access to all cleansed data

Build measures/metrics for what you want to know

- Dependent on who is using the data model

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Share Data Product

Share Data Product

- Data Product = Data Model & Measures
- Goal is to eliminate siloing of data
- No ability to change the data, the model or the measures
- Provides consistent analysis across the organization
- Otherwise, people just copy & paste into Excel!!

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Communicate/ Visualize Report

Communicate/Visualize Report

- Tells the story of our data
- Pictures are worth a 1,000 words
- Limited tables (rows & columns of data)
- Graphics, pictures, charts, etc.
- Interactive visualizations
- Take your audience into consideration

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Make Insightful Decisions

Make Insightful Decisions

The ultimate goal of Data Analysis

What is my data telling me?

- Trends, patterns, anomalies, etc.

Data backed decisions

Alternative is gut-based decisions

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Automation & Maintenance

- Determine needs for data refresh
- Setup scheduled refreshes
- Document data model
- Implement security rights
- Monitor report usage

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Performance Optimization

- Remove unnecessary fields (columns) in dataset
- Remove unnecessary records (rows) in dataset
- Hide tables, columns & measures if not expected to use
- Create measure in place of value column
- Hide value columns where a measure is used to aggregate

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The Importance of the Data Analysis Process Flow

Each step is an important as another

- Don't discount any step

Following from beginning to end = greatest success

- Don't skip steps

No magic button to push

Team effort to eliminate data silos

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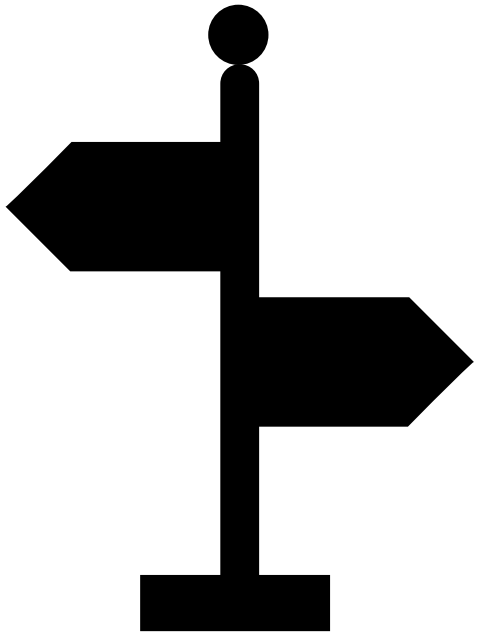
What's Next After Creating a Data Model



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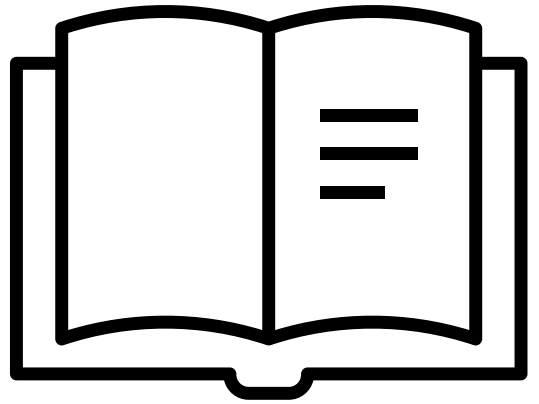
Document Data Model



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Why Document the Data Model?

Ensures users understand

- Data structure
- Relationships
- Business Logic

Errors, inconsistencies & changes can be tracked over time

New analysts can quickly onboard & make improvements

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Document **Power Pivot** Data Model

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Excel Documentation

Power Query

- Change Step Name
- Add Description to Step Properties
- Query Properties - Description

Power Pivot

- Table Properties - Description
- Measure - Description
- Fields – Description
- Advanced – Synonyms
- Put Measures in Separate Table

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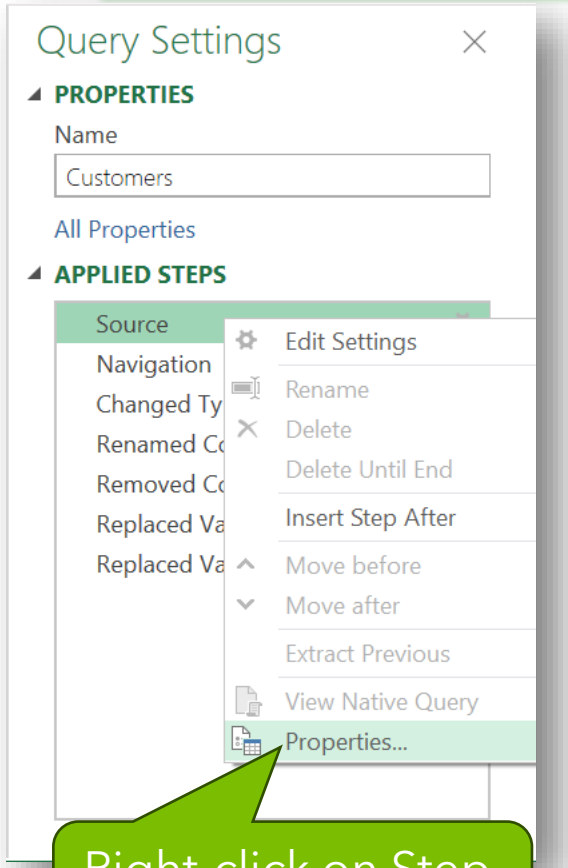
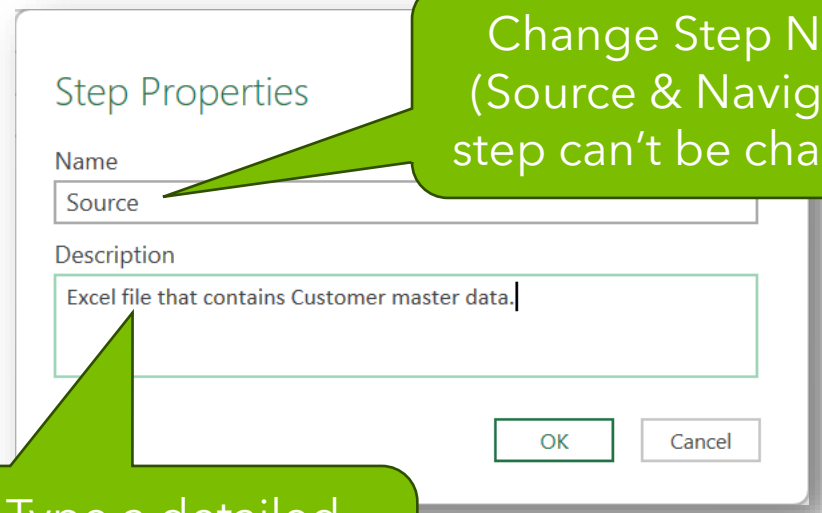
Excel **Power Query** – Document Steps

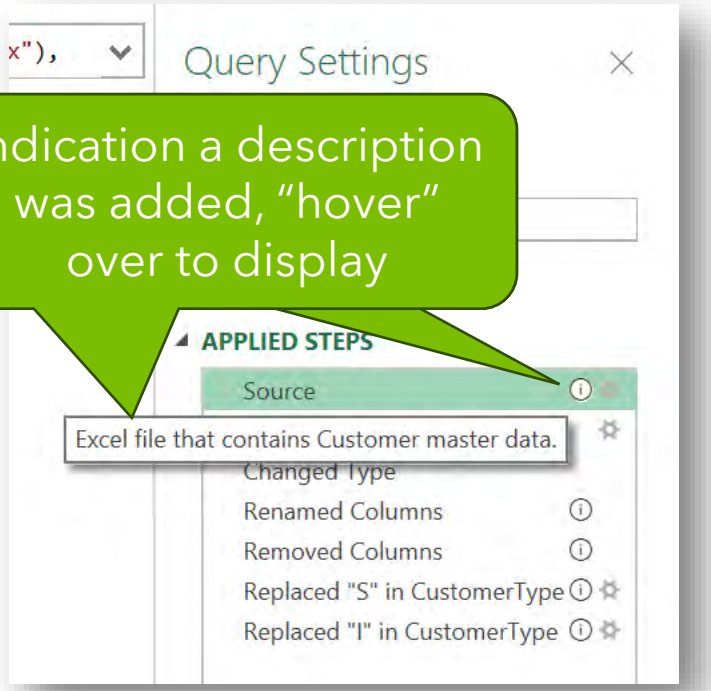


Right-click on Step, select Properties



Change Step Name (Source & Navigation step can't be changed)

Type a detailed description of what this step does



Indication a description was added, "hover" over to display

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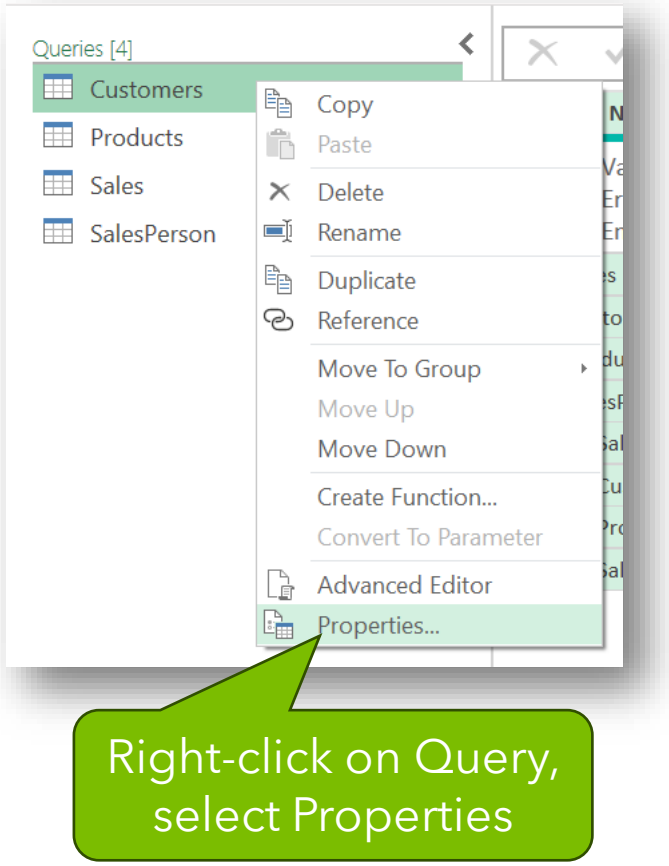
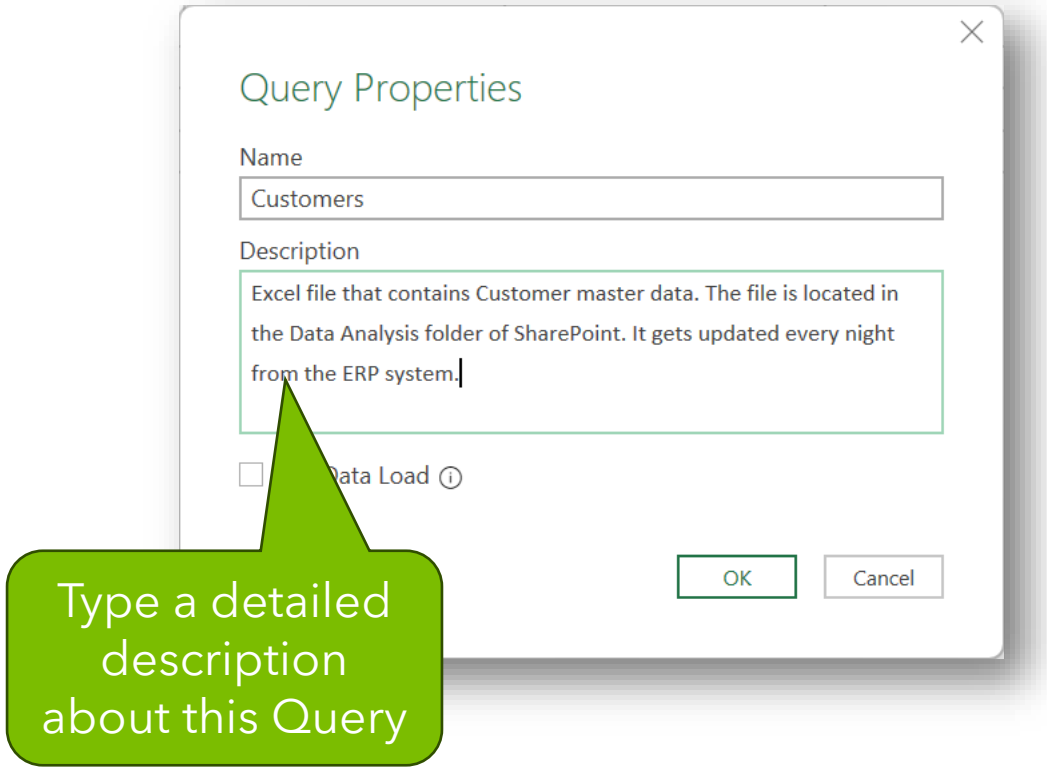
Excel **Power Query** – Document Query Description





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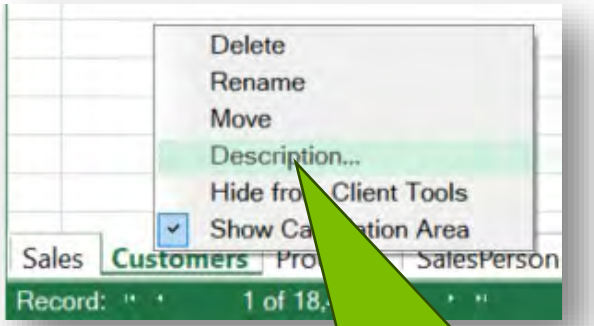
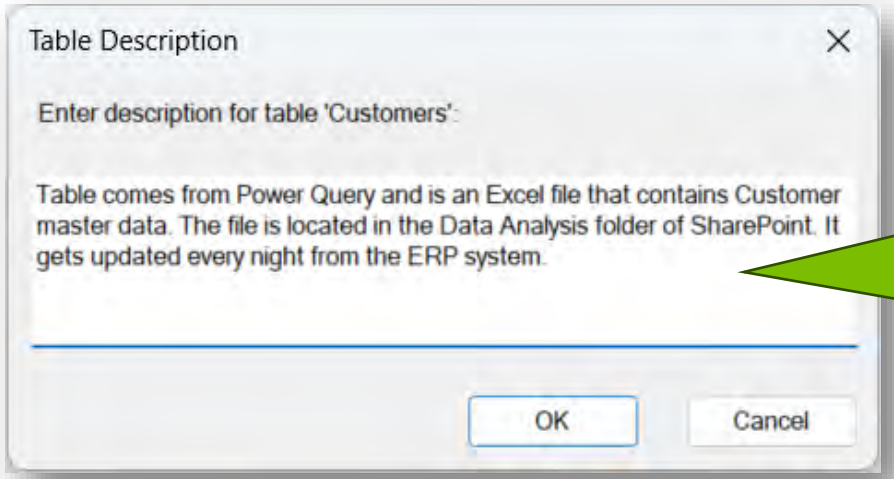
Excel **Power Pivot** – Document Table Description



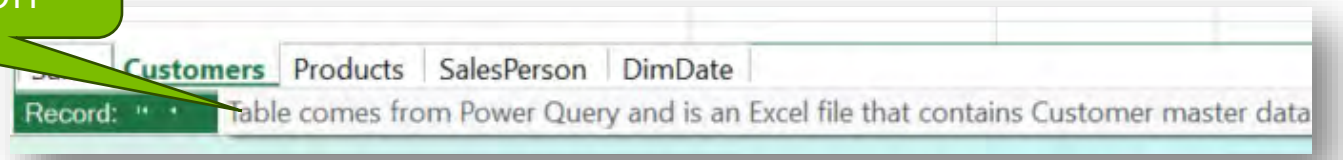
Right-click on Table, select Description



Type a detailed description about this Table. **Note**: this description is different from the Query description.

Limited to 256 characters

"Hover" over table name to display description



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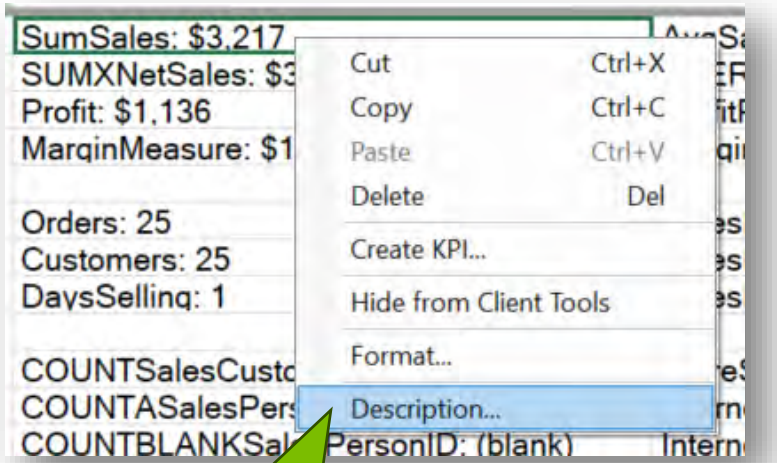
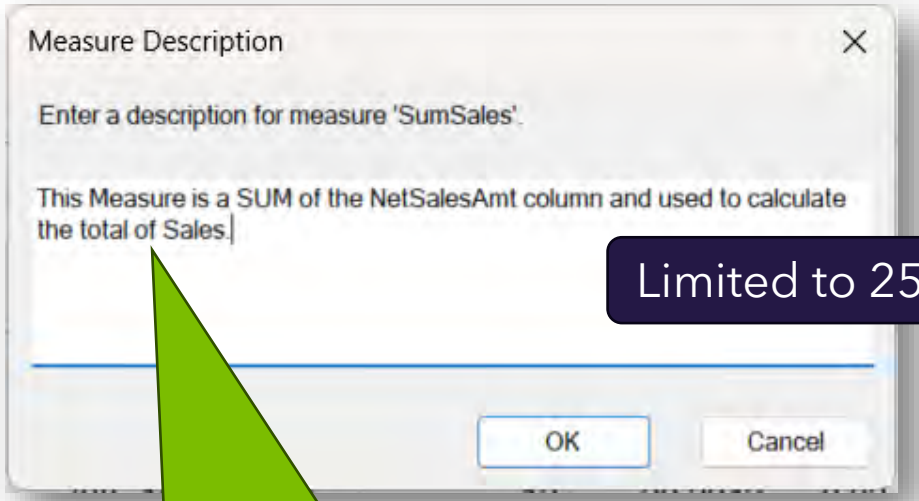
Excel **Power Pivot** – Document Measure Description



Right-click on Measure, select Description



Limited to 256 characters

Type a detailed description about this Measure

Note: You can also enter a Description on the Power Pivot ribbon in Excel

Note: The only way to display a measure description is to right-click on measure and select Description

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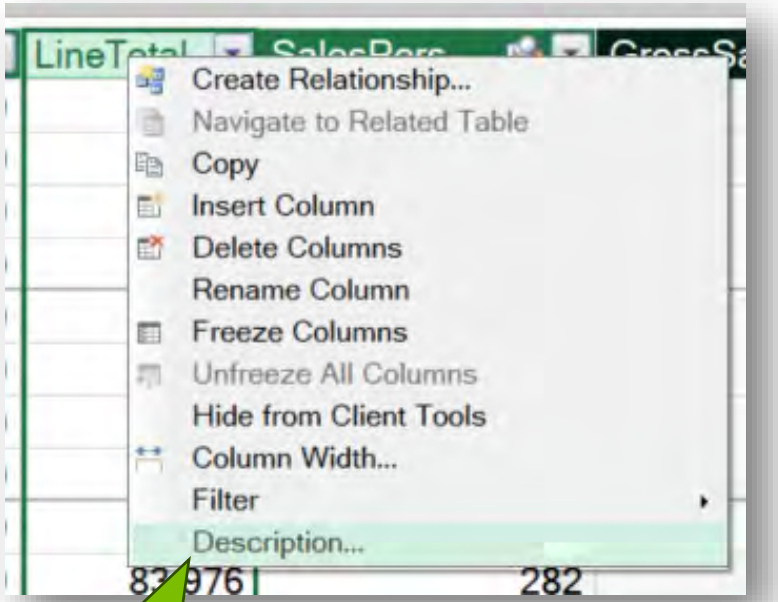
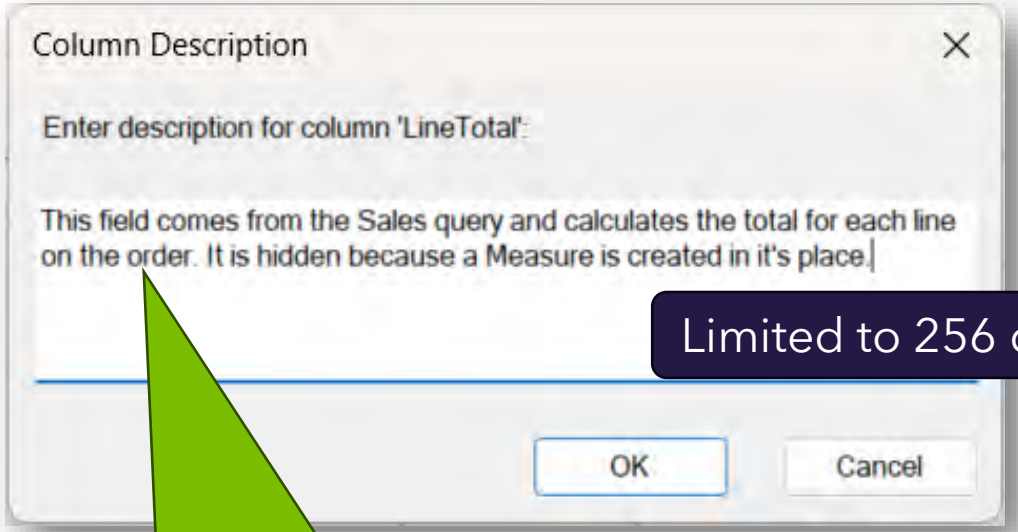
Excel **Power Pivot** – Document Field/Column Description



Right-click on Column, select Description



Limited to 256 characters

Type a detailed description about this Column

Note: The only way to display a column description is to right-click on column and select Description

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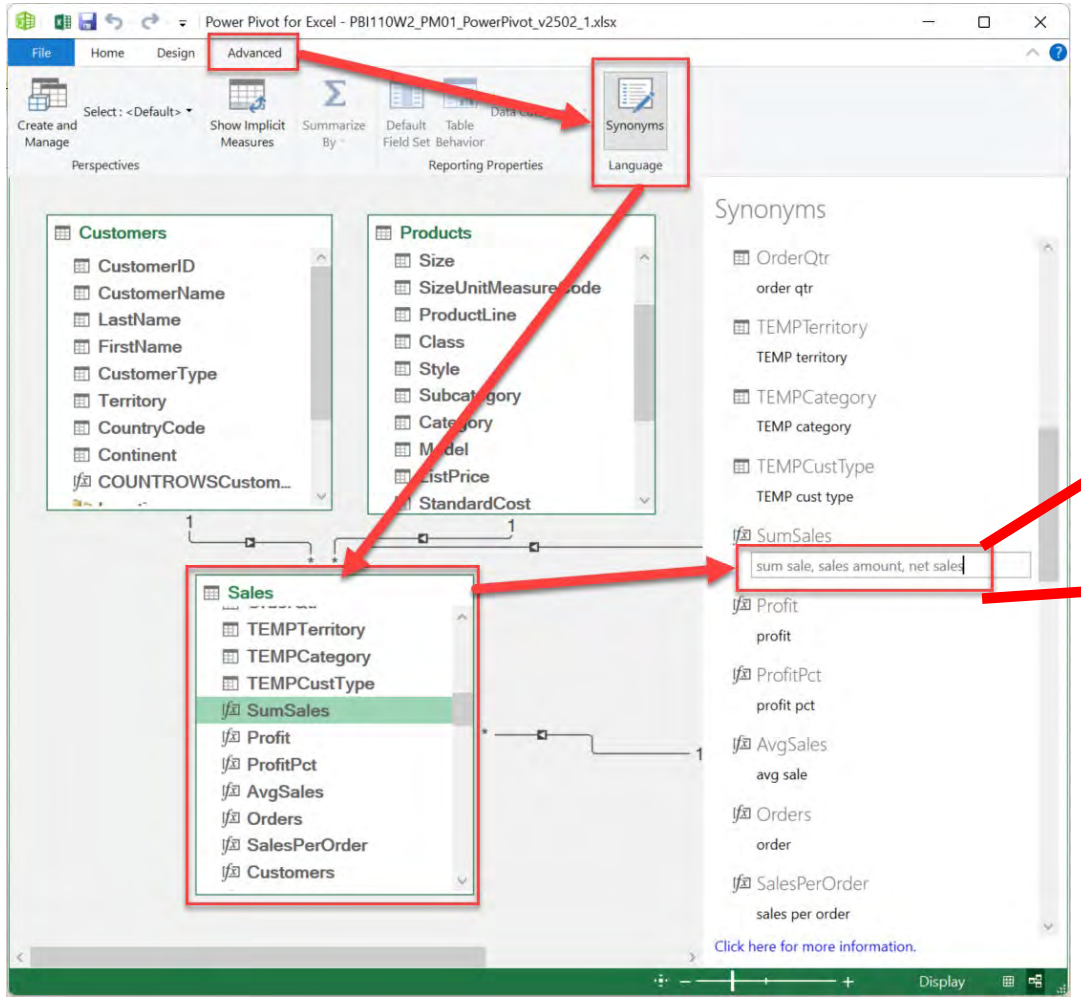
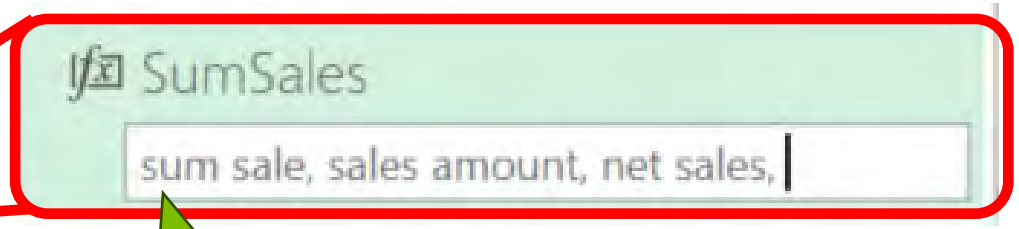
Excel **Power Pivot** – Create Synonyms for Fields





Can be used with Q&A feature when Data Model is saved to PowerBI.com

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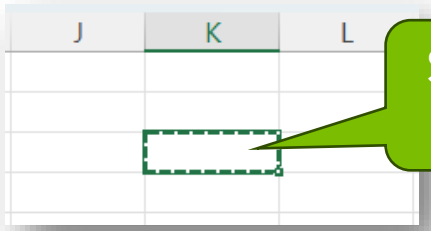
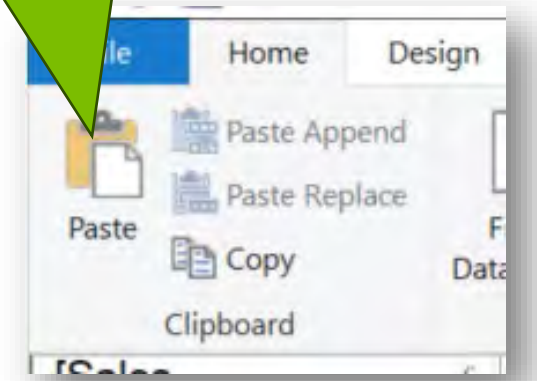
Excel **Power Pivot** – Place Measures in a Table – Step 1, Create Table

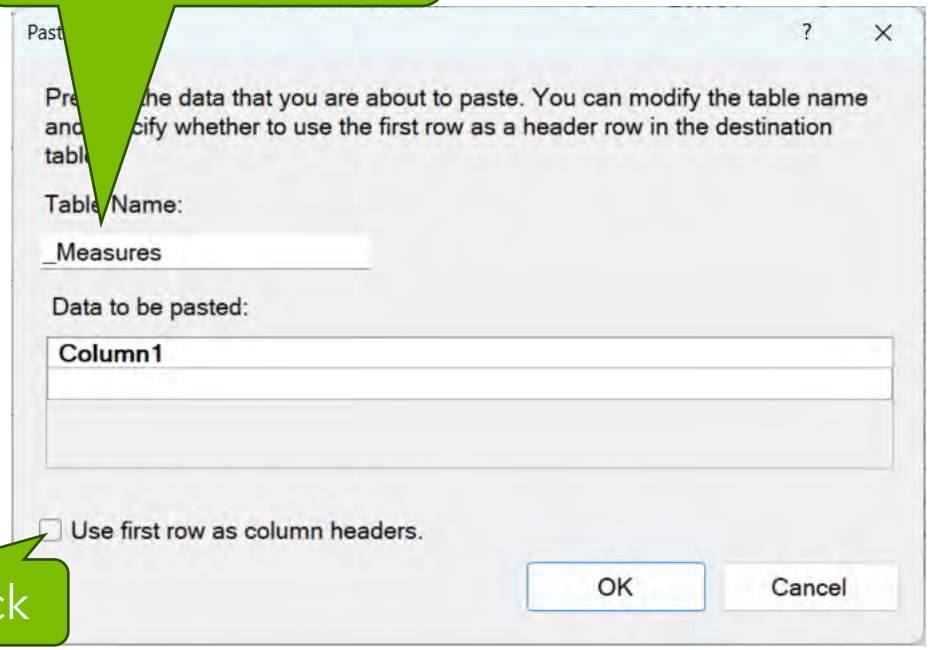


Select any Blank cell in Excel, then Ctrl-C

Go to Manage Data Model, select Paste

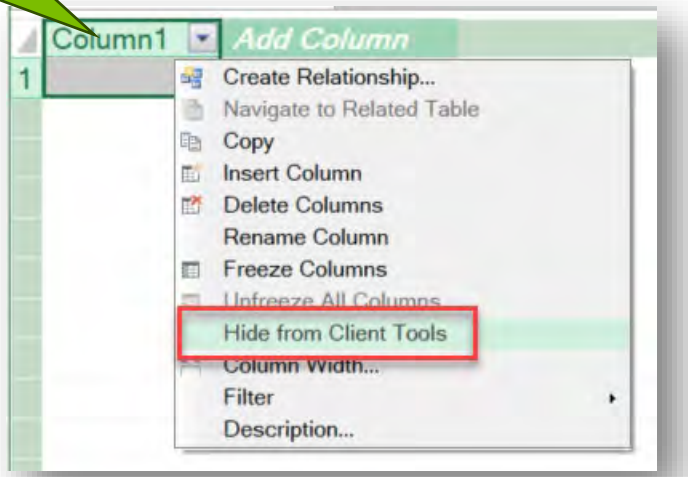


Give a table name "_Measures"



Uncheck

Right-click & Hide



Excel **Power Pivot** – Place Measures in a Table – Step 2, Add Measures

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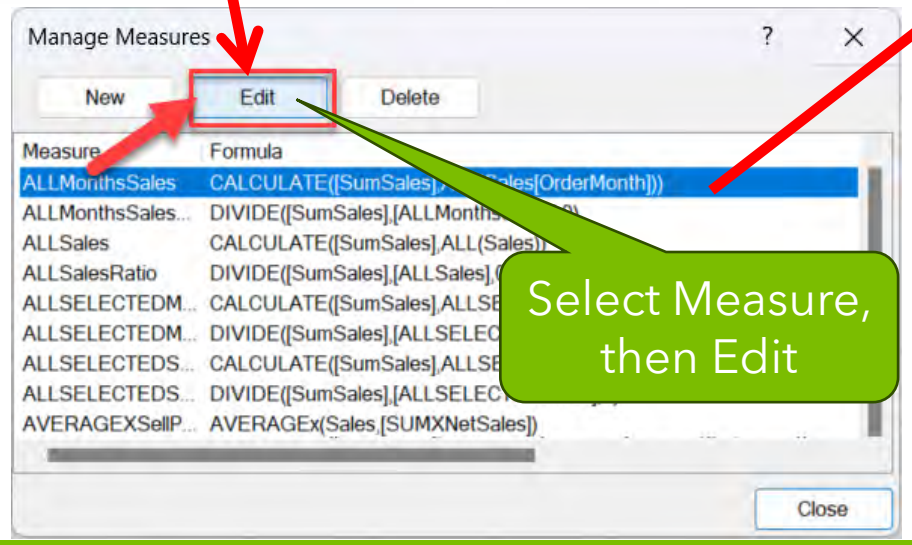

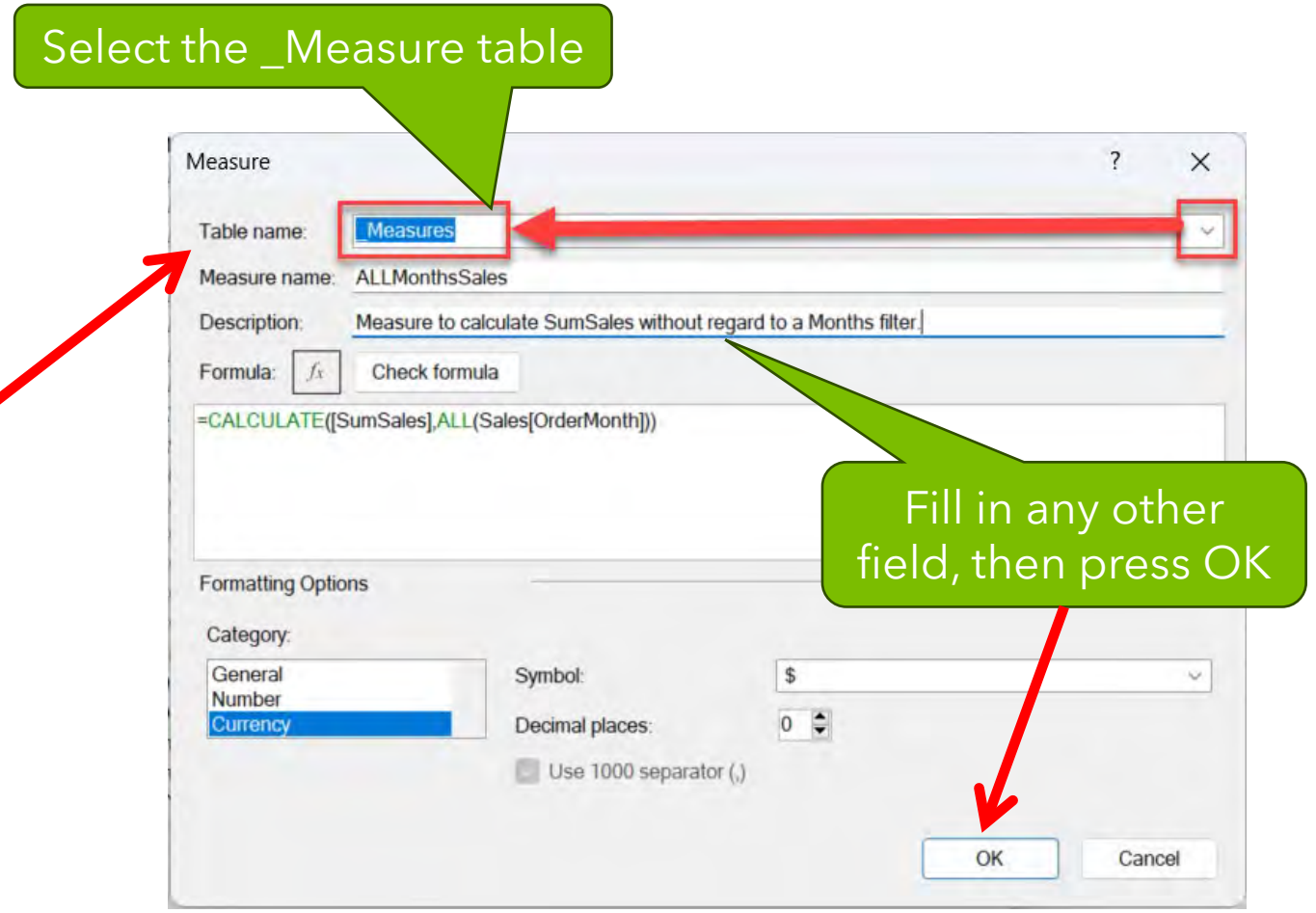

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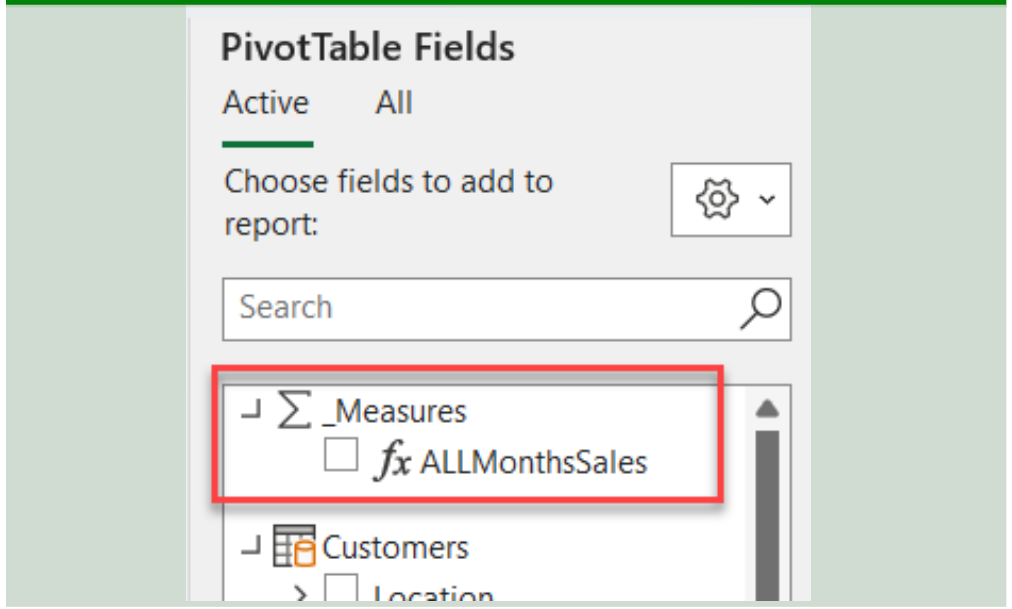
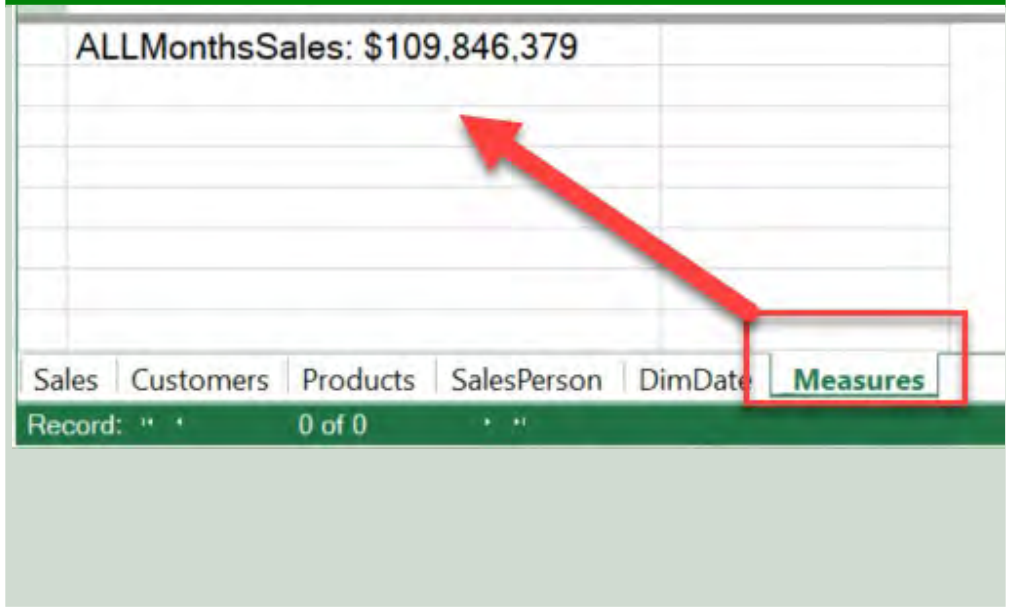
Excel **Power Pivot** – Place Measures in a Table – Step 3, View Measures in New Table

Excel – PivotTable



Power Pivot Data Model



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Excel Add-In Tool for Documentation

Power Pivot Utilities

- By Bertrand d'ARBONNEAU, hosted on sqlbi.com
- Hasn't been updated in awhile but still works

Documentation Features

- List Table Data Sources
- List Table Relationships
- List Measures
- List Calculated Columns
- List Unused Columns

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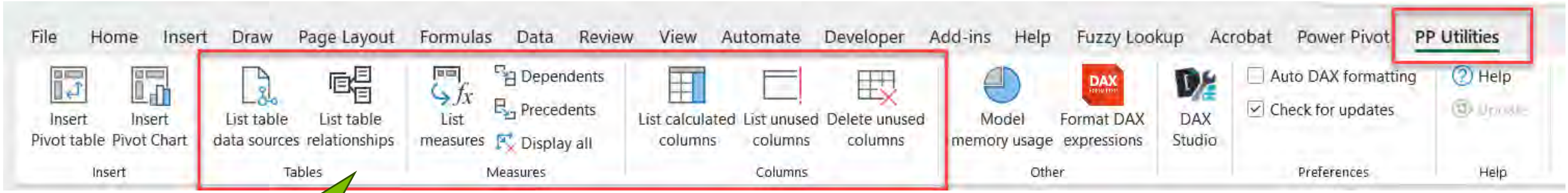
Power Pivot Utilities Ribbon



Documentation Features

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List Table Data Sources

	A	B	C	D
1	Table	Connection Name	Connection type	Description
2	_Measures	Connection	NOSOURCE	
3	Customers	Query - Customers	OLEDB	Table comes from Power Query and is an Excel file that contains Customer master data. The file is located in the Data Analysis folder of SharePoint. It gets updated every night from the ERP system.
4	DimDate	Excel PBI999X9 PM97 v1.0 DATE Table	OLEDB - MS Jet	
5	Products	Query - Products	OLEDB	
6	Sales	Query - Sales	OLEDB	
7	SalesPerson	Query - SalesPerson	OLEDB	
8				

SalesByCategory | SalesPer | TimeIntelligence | Tables_Sources

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List Table Relationships

	A	B	C	D	E	F
1	ID	Foreign Key Table	Foreign Key Column	Primary Key Table	Primary Key column	Active
2	1	Sales	CustomerID	Customers	CustomerID	TRUE
3	2	Sales	ProductID	Products	ProductID	TRUE
4	3	Sales	SalesPersonID	SalesPerson	SalesPersonID	TRUE
5	4	Sales	OrderDate	DimDate	DateKey	TRUE
6						

TimeIntelligence | Tables_Sources | Model_Relationships | Measur

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List Measures

	A	B	C	D
1	TABLE	MEASURE	DAX Expression	DESCRIPTION
2		__No measures defined	:=1	
3	_Measures	ALLMonthsSales	:=CALCULATE([SumSales],ALL(Sales[OrderMonth]))	Measure to calculate SumSales without regard to a Months filter.
54	Sales	SumOrderSize	:="SUM([OrderSize])"	
55	Sales	SumSales	:=SUM([NetSalesAmt])	This Measure is a SUM of the NetSalesAmt column and used to calculate the total of Sales.
56	Sales	SumTotalStdCost	:=SUM([TotalStdCost])	
57	Sales	SUMXDiscAmt	:=SUMX(Sales,ROUND([SUMXGrossSales]*[Discount	
58	Sales	SUMXGrossSales	:=SUMX(Sales,ROUND([OrderQty]*[UnitPrice],2))	
59	Sales	SUMXNetSales	:=[SUMXGrossSales]-[SUMXDiscAmt]	

Tables_Sources | Model_Relationships | Measures | Calculated_Co

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List Calculated Columns

	A	B	C	D
1	TABLE	COLUMN	DAX Expression	DESCRIPTION
2	Sales	DiscountAmt	=ROUND([GrossSales]*[DiscountPct],2)	
3	Sales	GrossSales	=ROUND([OrderQty]*[UnitPrice],2)	Calculated Column that calculates Gross Sales by multiplying Qty x UnitPrice.
4	Sales	Margin	=ROUND([NetSalesAmt]-[TotalStdCost],2)	
5	Sales	MarginPct	=DIVIDE([Margin],[NetSalesAmt],0)	
6	Sales	NetSalesAmt	=ROUND([GrossSales]-[DiscountAmt],2)	
7	Sales	OrderDay	=DAY([OrderDate])	
8	Sales	OrderMonth	=MONTH([OrderDate])	
	Sales	OrderQtr	=SWITCH([OrderMonth], 1,1,2,1,3,1,	

Model_Relationships | Measures | Calculated_Columns | Unused (

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List Unused Columns

	A	B	C	D	E	F	G	H	I	J	K	L	M
1	Table	Column	Pivot Tables	Pivot Charts	Slicers	Relationships	Measures	Cube Formulas	Calculated Columns	Sorted By	Hierarchies	Is Used	Mark For Delete (Works only on Excel 2016)
2	_Measures	RowNumber										FALSE	Yes
3	_Measures	Column1										FALSE	Yes
4	Customers	CustomerID				TRUE						TRUE	No
5	Customers	CustomerName										FALSE	Yes
6	Customers	LastName										FALSE	Yes
7	Customers	FirstName										FALSE	Yes
8	Customers	CustomerType	TRUE		TRUE		TRUE		TRUE			TRUE	No
9	Customers	Territory	TRUE						TRUE		TRUE	TRUE	No
10	Customers	CountryCode					TRUE				TRUE	TRUE	No
11	Customers	Continent									TRUE	TRUE	No
12	DimDate	DateKey	TRUE		TRUE	TRUE	TRUE					TRUE	No
13	DimDate	FullDate										FALSE	Yes
14	DimDate	Calendar Year	TRUE		TRUE							TRUE	No
15	DimDate	Calendar YearMonth										FALSE	Yes

Measures | Calculated_Columns | Unused Columns Report

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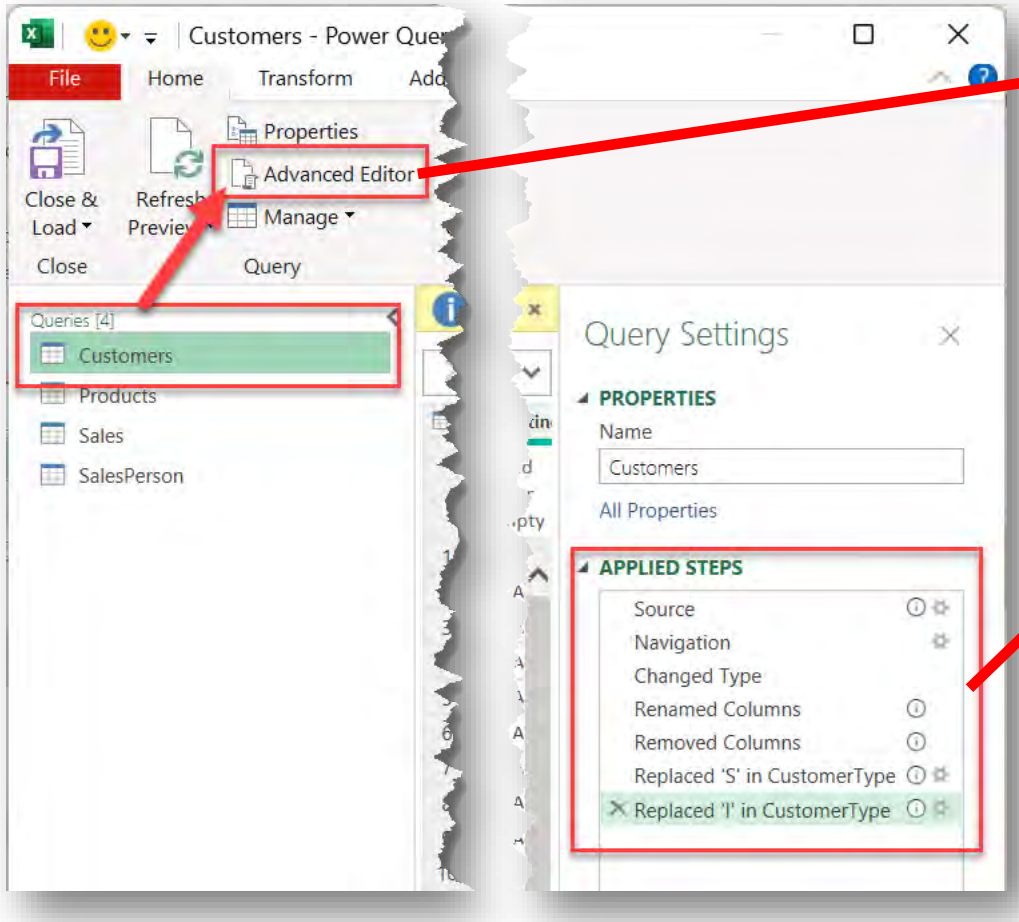
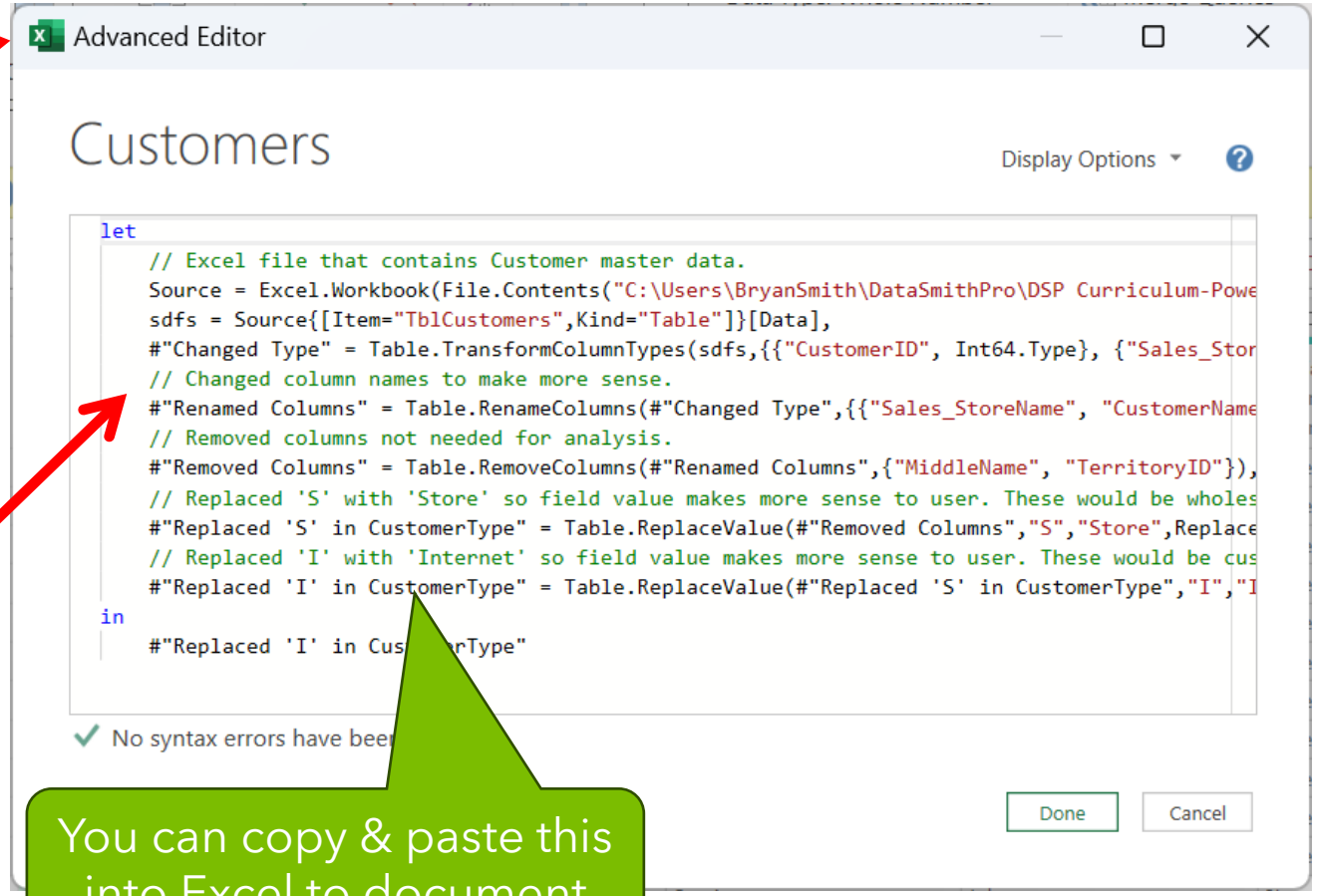
Power Query Applied Steps Missing from Power Pivot Utilities Add-In





You can copy & paste this into Excel to document

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I Used ChatGPT to Write a Macro to Document

	A	B	C	D
1	⚠ **WARNING/DISCLAIMER** ⚠	**How to Run This Macro**		**Copy the Below Text:**
2		1. **Open your Excel file** with Power Query queries.		Sub ExtractPowerQuerySteps()
3	**This macro extracts Power Query steps from the current Excel workbook and formats them into a structured table. Please review the following before using:**	2. **Press ALT + F11** to open the **VBA Editor**.		Dim ws As Worksheet
4		3. **Copy & Paste** the code on the right.		Dim qry As WorkbookQuery
5	☑ ****Intended Use**:**	4. Click **Insert > Module, paste the updated code**.		Dim regexStep As Object, regexSource As Object, regexDesc As Object
6	- This macro is designed to work only with Power Query queries embedded in the current workbook.	5. Run the macro **ExtractPowerQuerySteps**.		Dim mCode As String
7	- It generates an output sheet named "PowerQuerySteps" and formats it for readability.			Dim lines() As String
8				Dim currentStep As String
9	⚠ ****Caution**:**			Dim stepFormula As String
10	- Running this mac ill overwrite** any existing "PowerQuerySteps" sheet.			D n ste Descripti s S g
29				On Erro GoTo 0

Mc hips | Measures | Calculated_Columns | Unused Columns Report | QueryStepsMacro | PowerQuerySteps

PLEASE read entire Disclaimer before using the macro!!

Macro to extract Power Query steps to a Worksheet

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Macro Results

	A	B	C	D
1	Query Name	Step Name	M Formula	Description
2	Customers	Source	= Excel.Workbook(File.Contents("C:\Users\BryanSmith\DataSmithPro\DSP Curriculum-PowerBI - DataSources\PBI999X9 PM98 v1.1 AW DataSet.xlsx"), null, true), sdfs = Source{[Item="TblCustomers",Kind="Table"]}[Data],	Excel file that contains Customer master data.
3	Customers	Changed Type	= Table.TransformColumnTypes(sdfs,{{"CustomerID", Int64.Type}, {"Sales_StoreName", type text}, {"LastName", type text}, {"FirstName", type text}, {"MiddleName", type text}, {"CustomerType", type text}, {"TerritoryID", Int64.Type}, {"SalesTerritoryName", type text}, {"CountryRegionCode", type text}, {"Group", type text}}),	
4	Customers	Renamed Colu	= Table.RenameColumns(#"Changed Type",{{"Sales_StoreName", "CustomerName"}, {"CountryRegionCode", "CountryCode"}, {"Group", "Continent"}, {"SalesTerritoryName", "Territory"}}),	Changed column names to make more sense.
5	Customers	Removed Colu	= Table.RemoveColumns(#"Renamed Columns",{"MiddleName", "TerritoryID"}),	Removed columns not needed for analysis.
6			= Table.ReplaceValue(#"Removed	Replaced 'S' with 'Store' so field value makes more sense to user. These
			= Table.SelectColum "Size", "SizeUnitMea "Subcategory", "Cate	

Note: Make sure you don't use " in description, I replaced with '

Model_Relationships | Measures | Calculated_Columns | Unused Columns Report | QueryStepsMacro | PowerQuerySteps

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Document **Power BI Desktop** Data Model

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Power BI Desktop Documentation

Power Query

- Change Step Name
- Add Description to Step Properties

Model View

- Properties (for Measures, Fields, Calculated Columns & Tables)
  - Description
  - Synonyms
  - Display folder
    - FolderName1\FolderName2 (if needed)
  - Advanced – Data category

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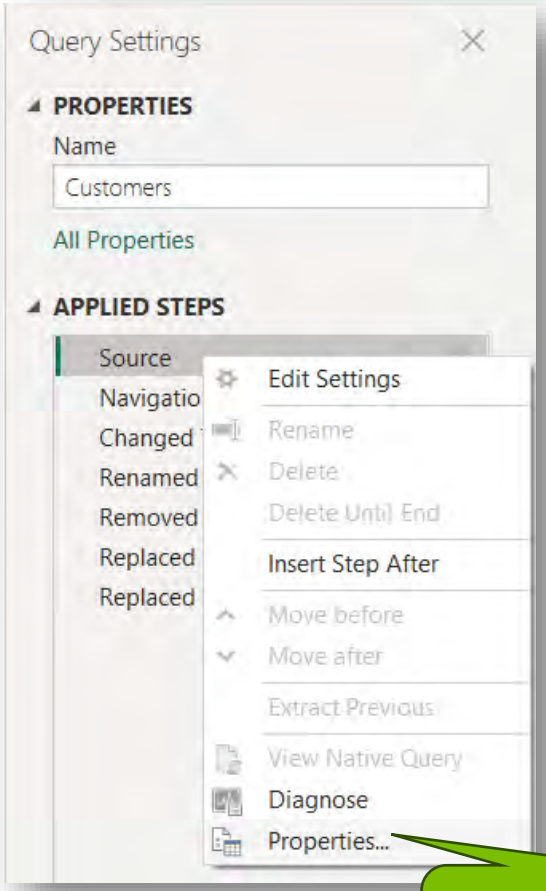
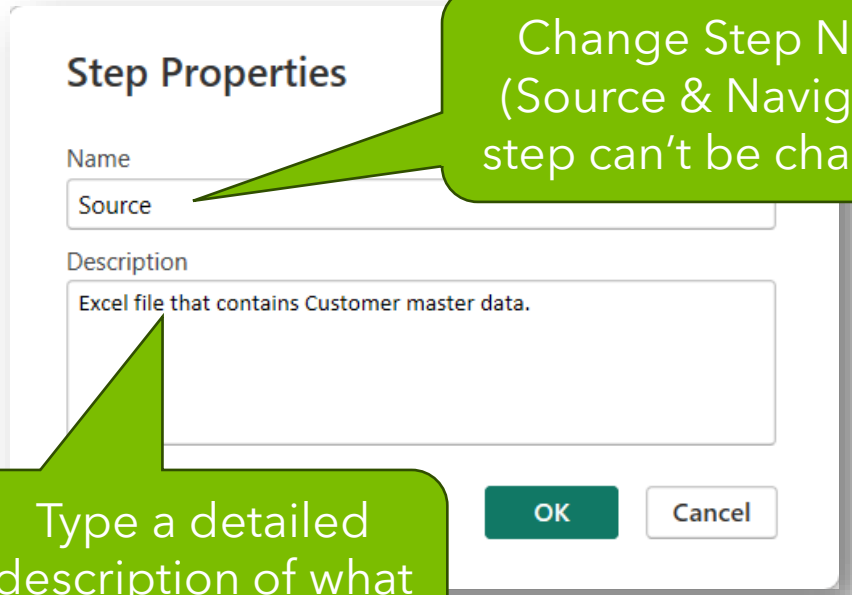
Power BI Desktop Power Query – Document Steps

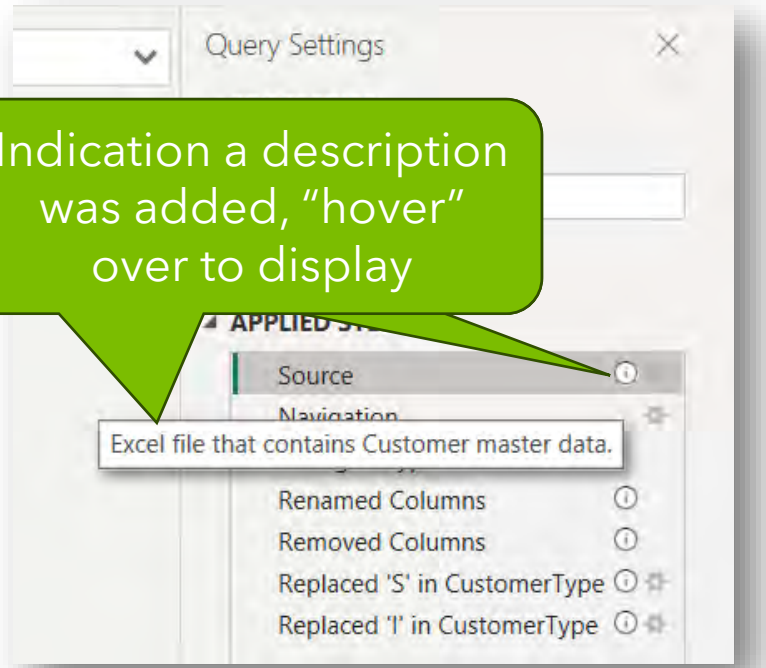


Right-click on Step, select Properties



Change Step Name (Source & Navigation step can't be changed)

Type a detailed description of what this step does



Indication a description was added, "hover" over to display

Power BI Desktop Power Query – Document Query Description

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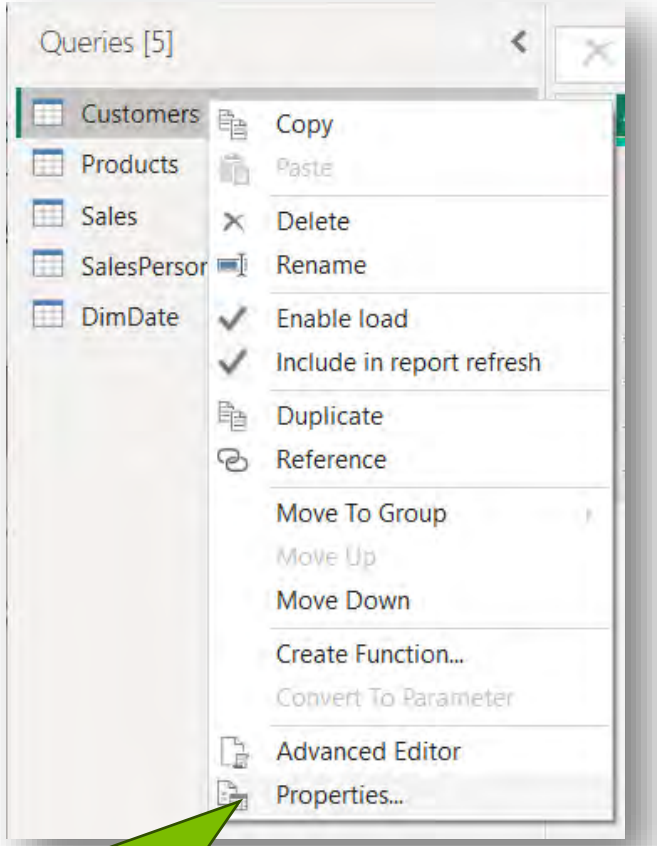
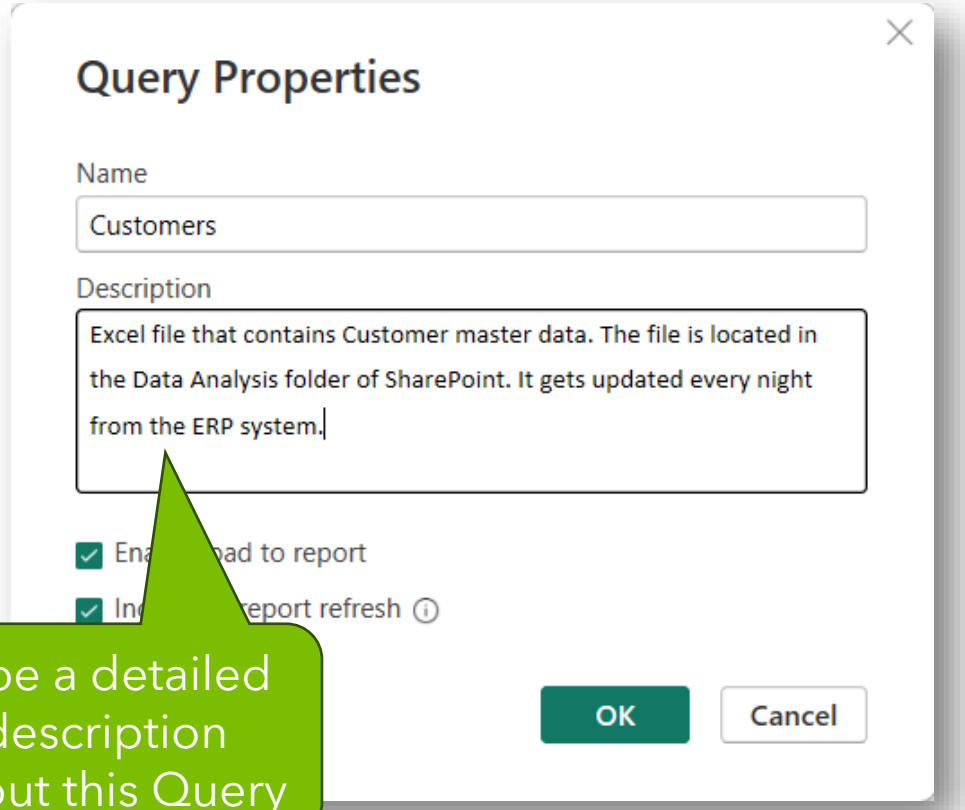


Right-click on Query, select Properties



Type a detailed description about this Query

Power BI Desktop – Document Table Description

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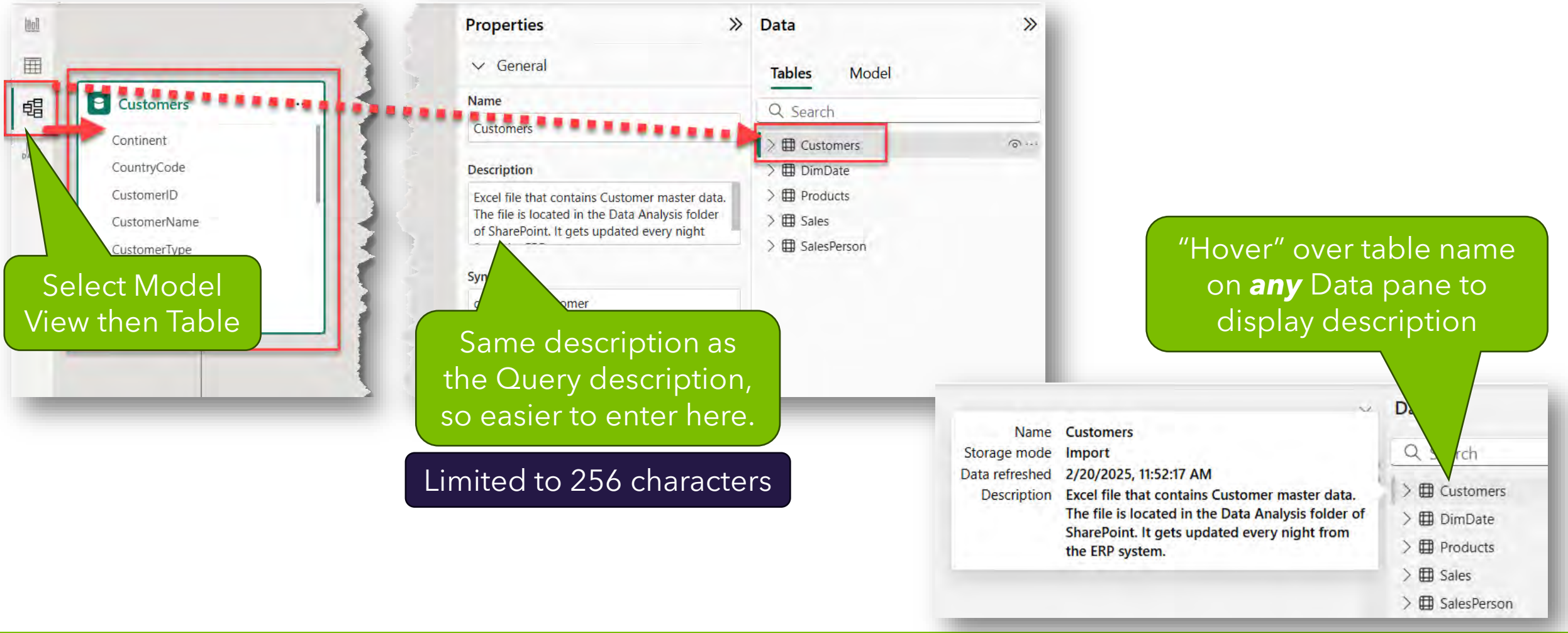

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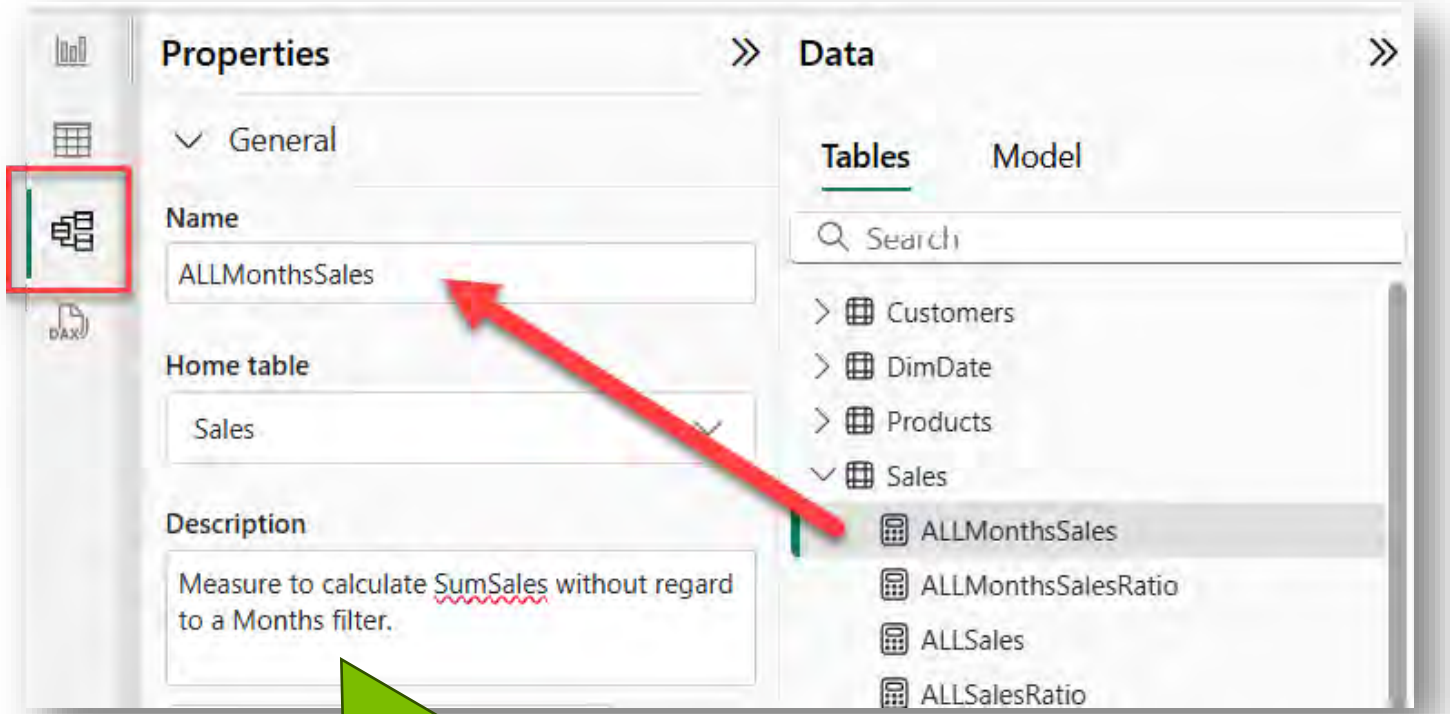
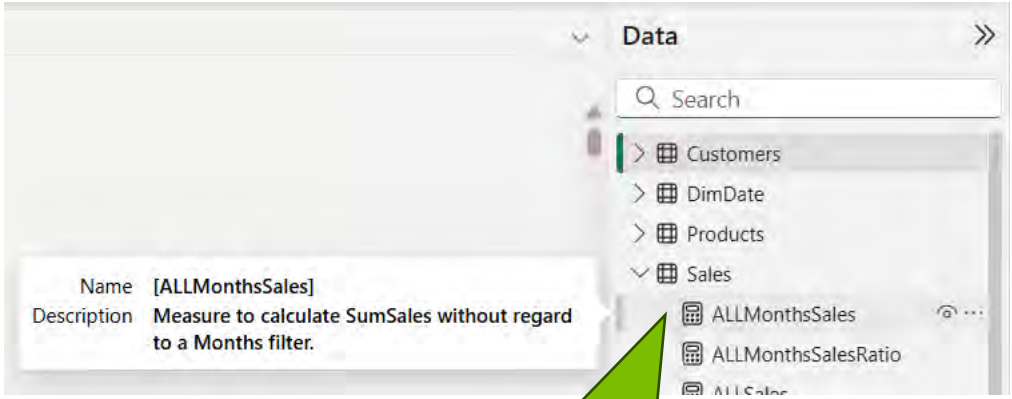
Power BI Desktop – Document Measure Description



Type a detailed description about this Measure

Limited to 256 characters



"Hover" over measure name on ***any*** Data pane to display description

Power BI Desktop – Document Field/Column Description

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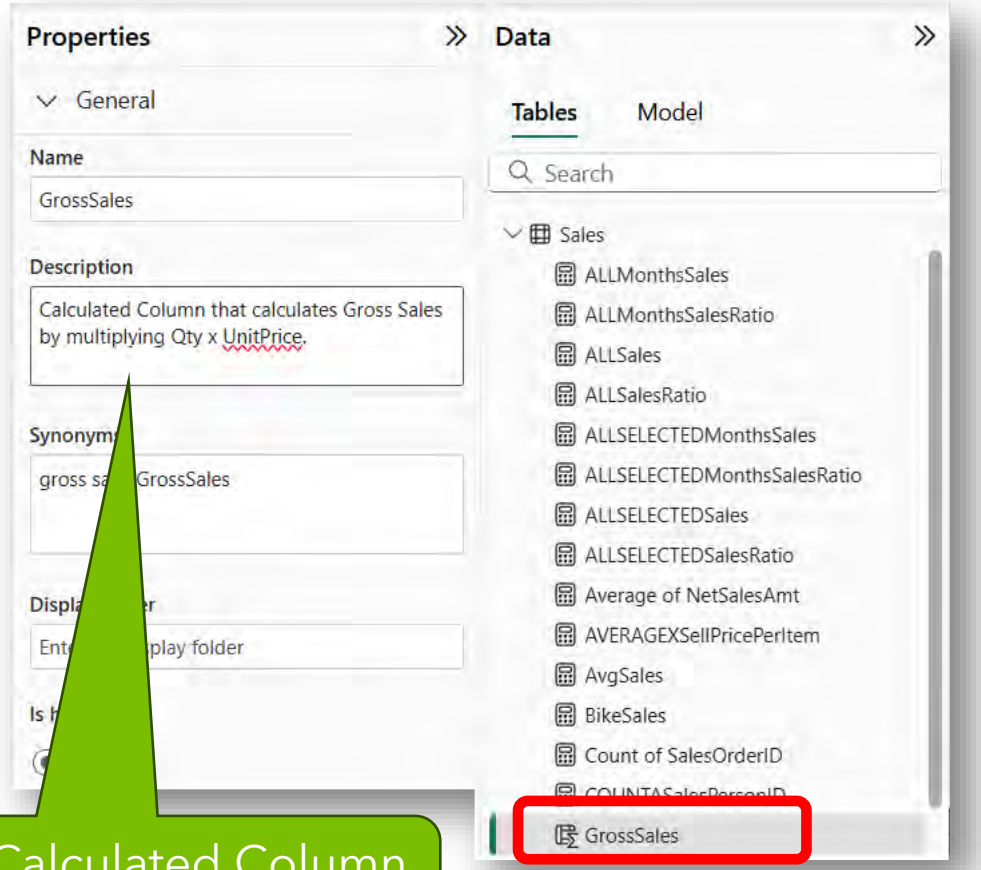
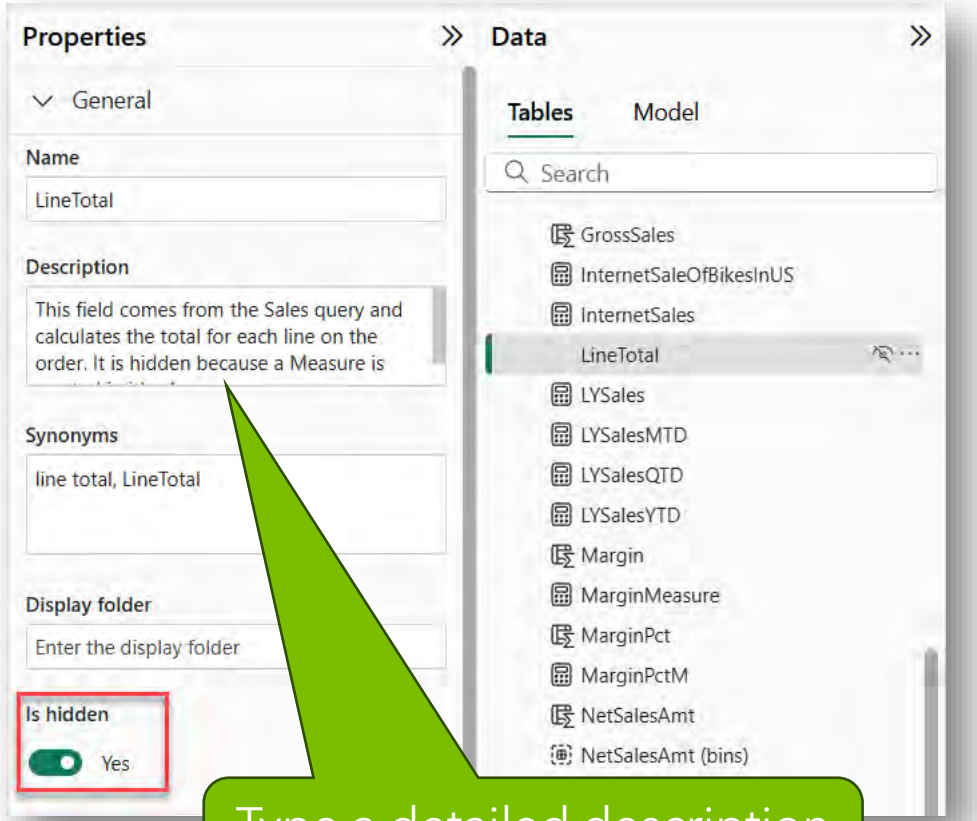


Calculated Column description



Type a detailed description about any Column

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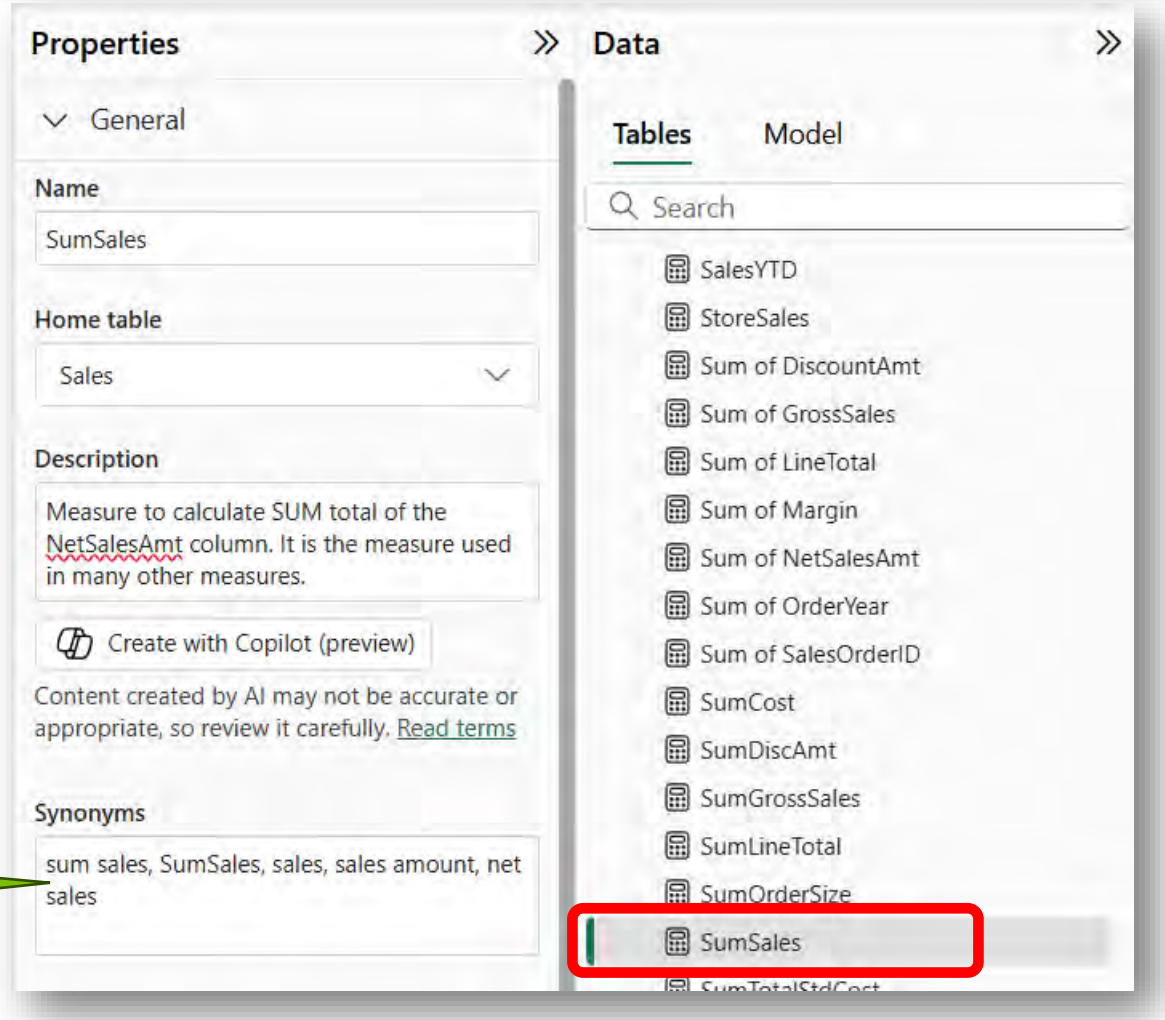
Power BI Desktop – Create Synonyms for Fields



Can be used with Q&A feature

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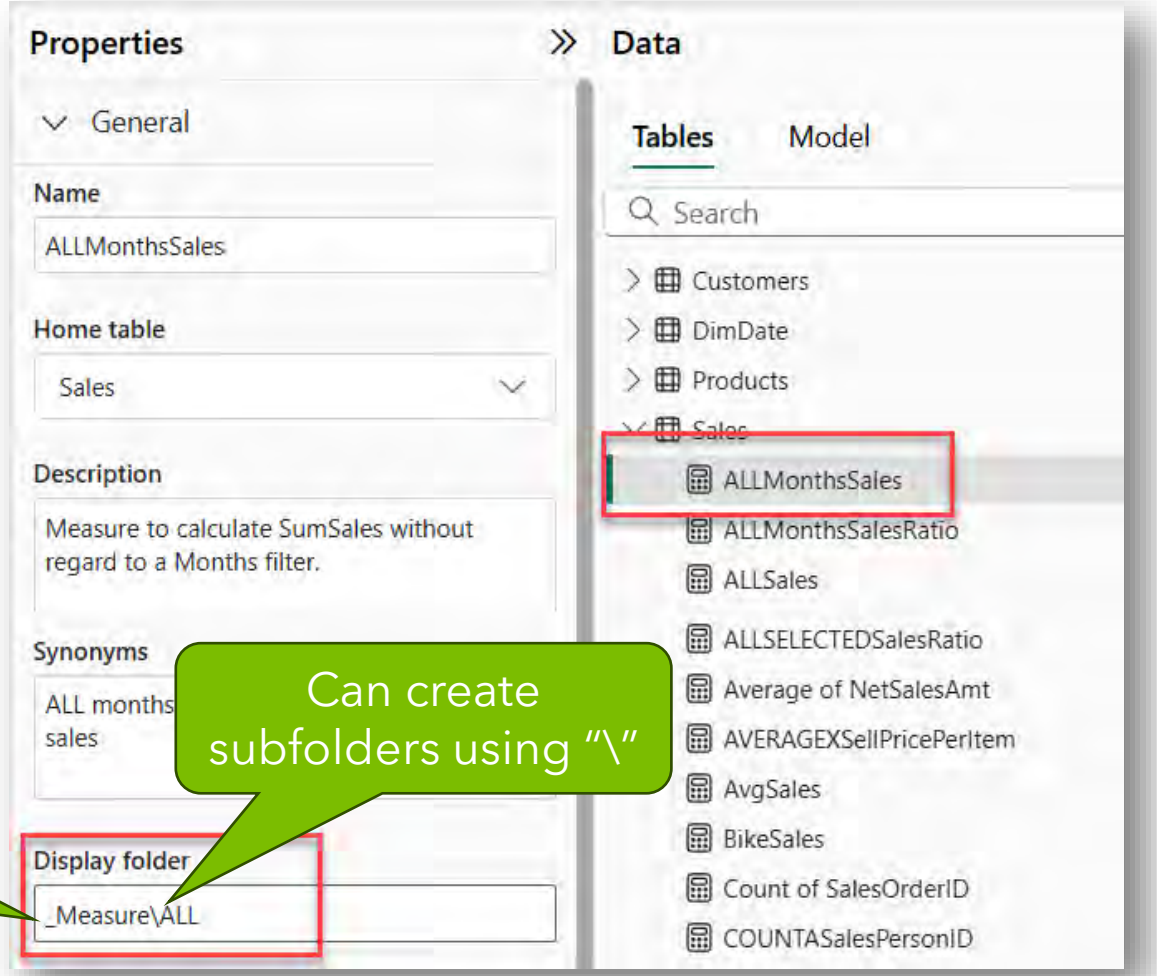
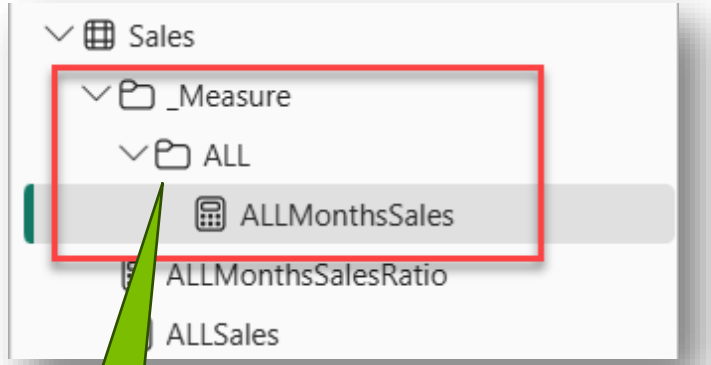
Power BI Desktop – Place Measures in a Folder\Subfolder



Give folder name "_Measures"

Can create subfolders using "\"



Result

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Power BI Desktop Add-In for Documentation

Model Documenter

- By Marc Lelijveld & Ton Swart, hosted on data-marc.com

Documentation Features

- Creates PBI-D file with model documentation
- Table details
- Data source details, including steps & description
- Column details
- Measure details
- Relationship details

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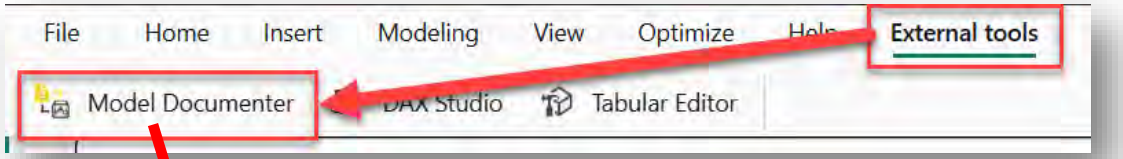
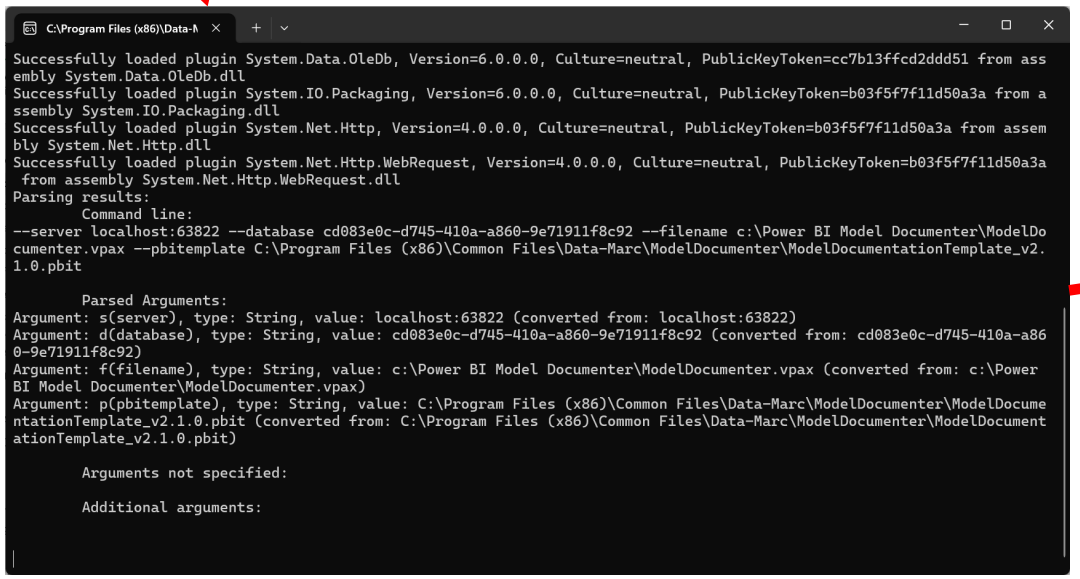
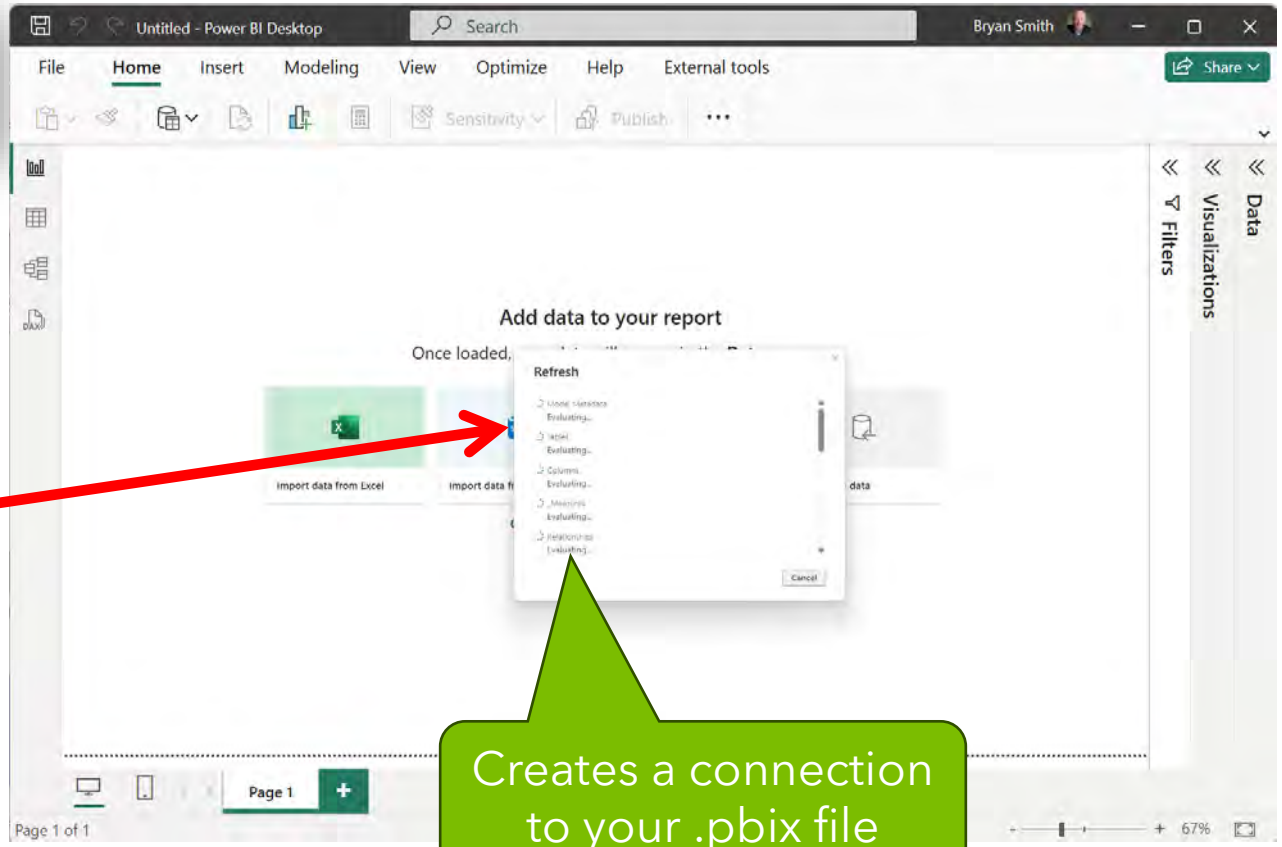
Access Model Documenter







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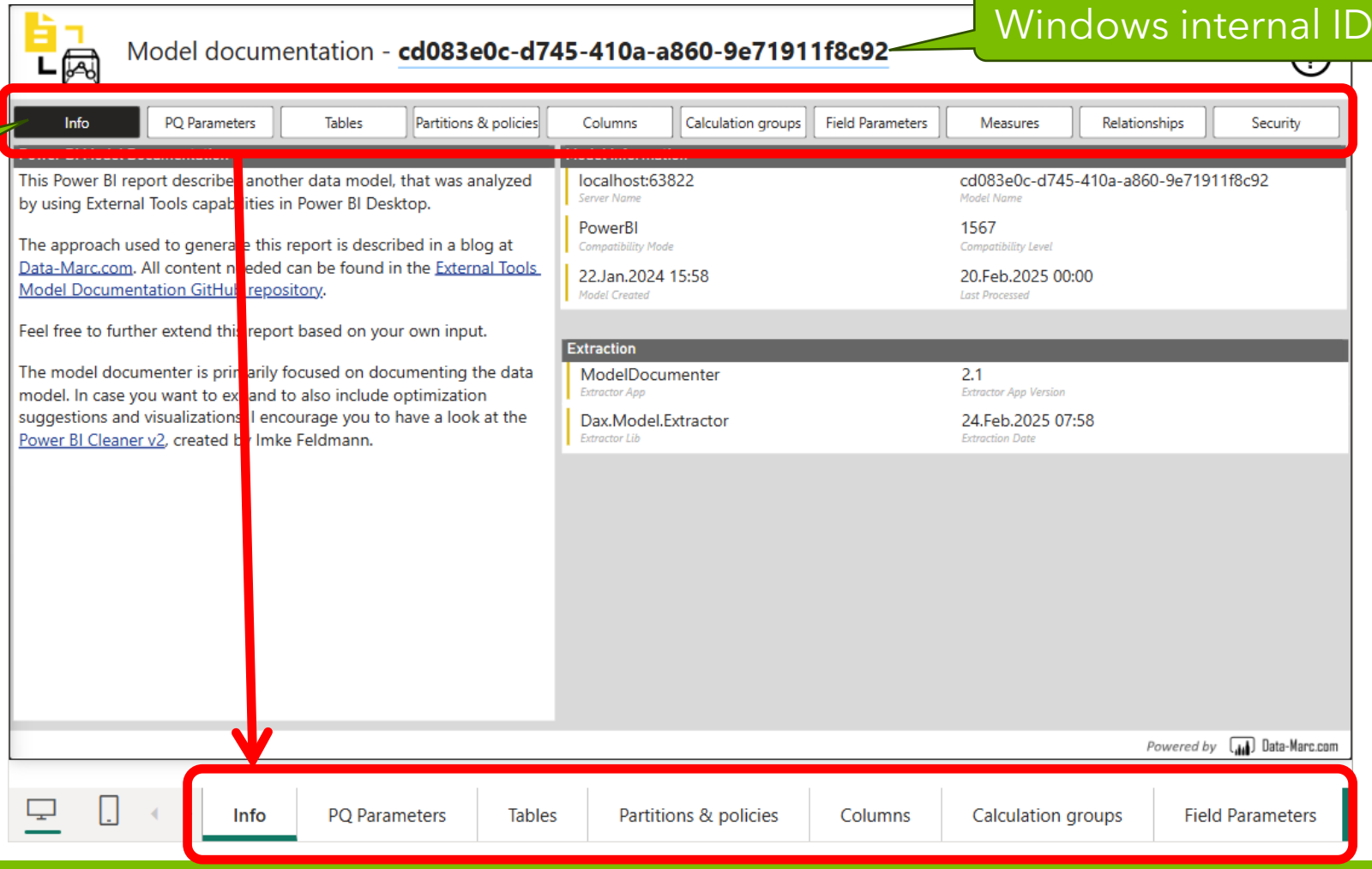
Model Documenter Result

PBI-D file

Windows internal ID of .pbix file

"Buttons" to report pages (hold Ctrl to select)



Model Documenter – Tables

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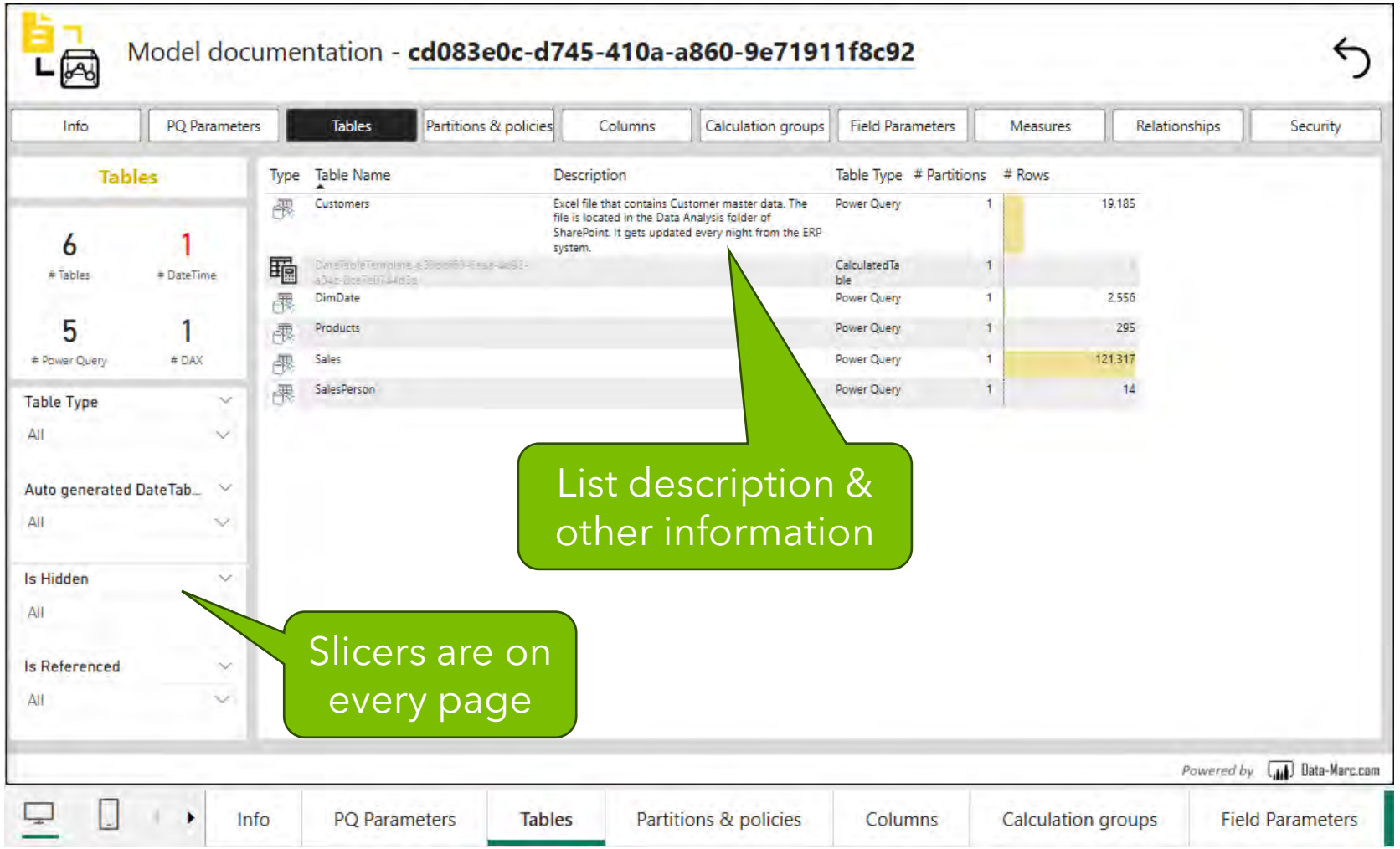

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Model Documenter – Partitions & Policies

Model Documenter – Columns

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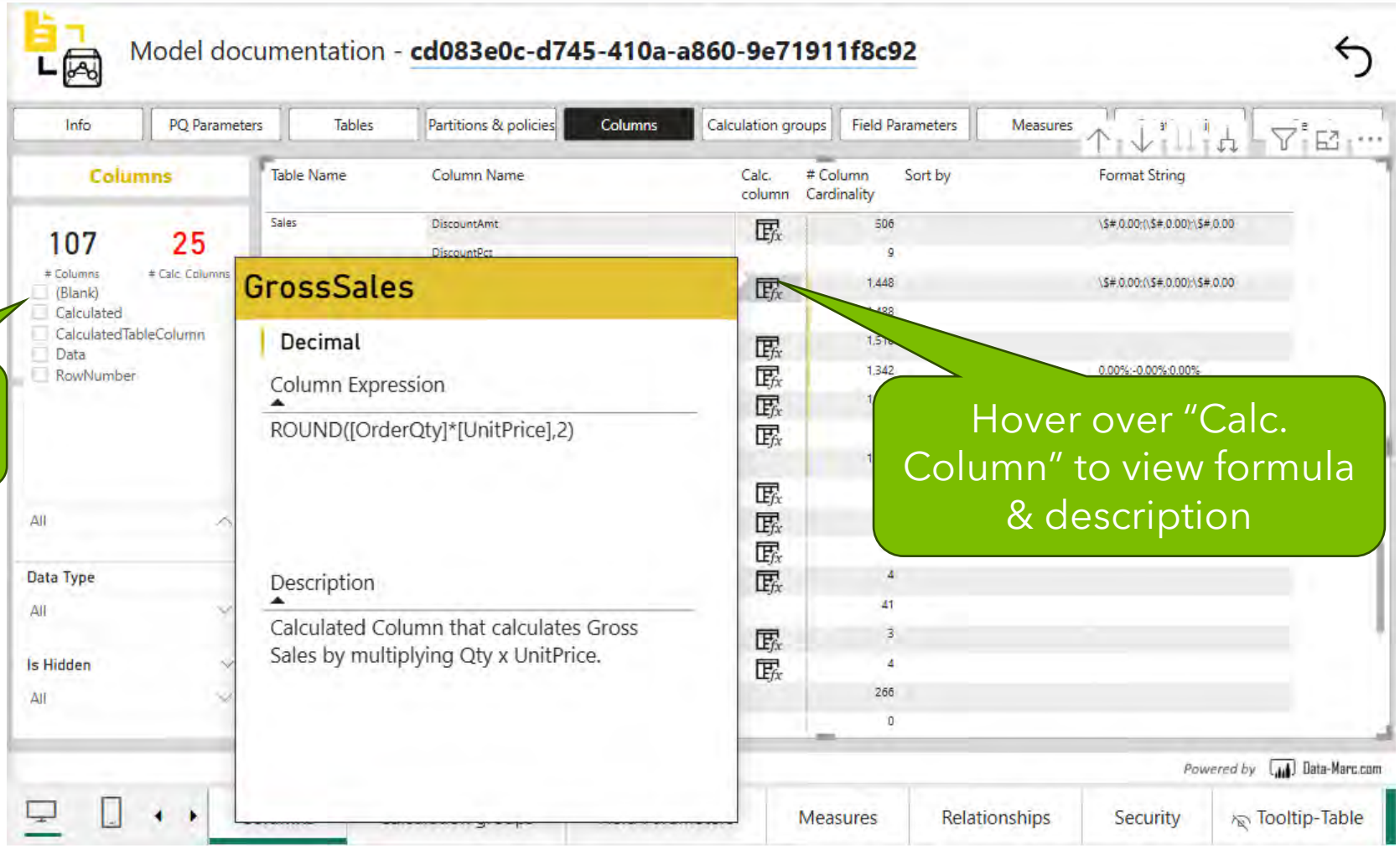

Model Documenter – Measures

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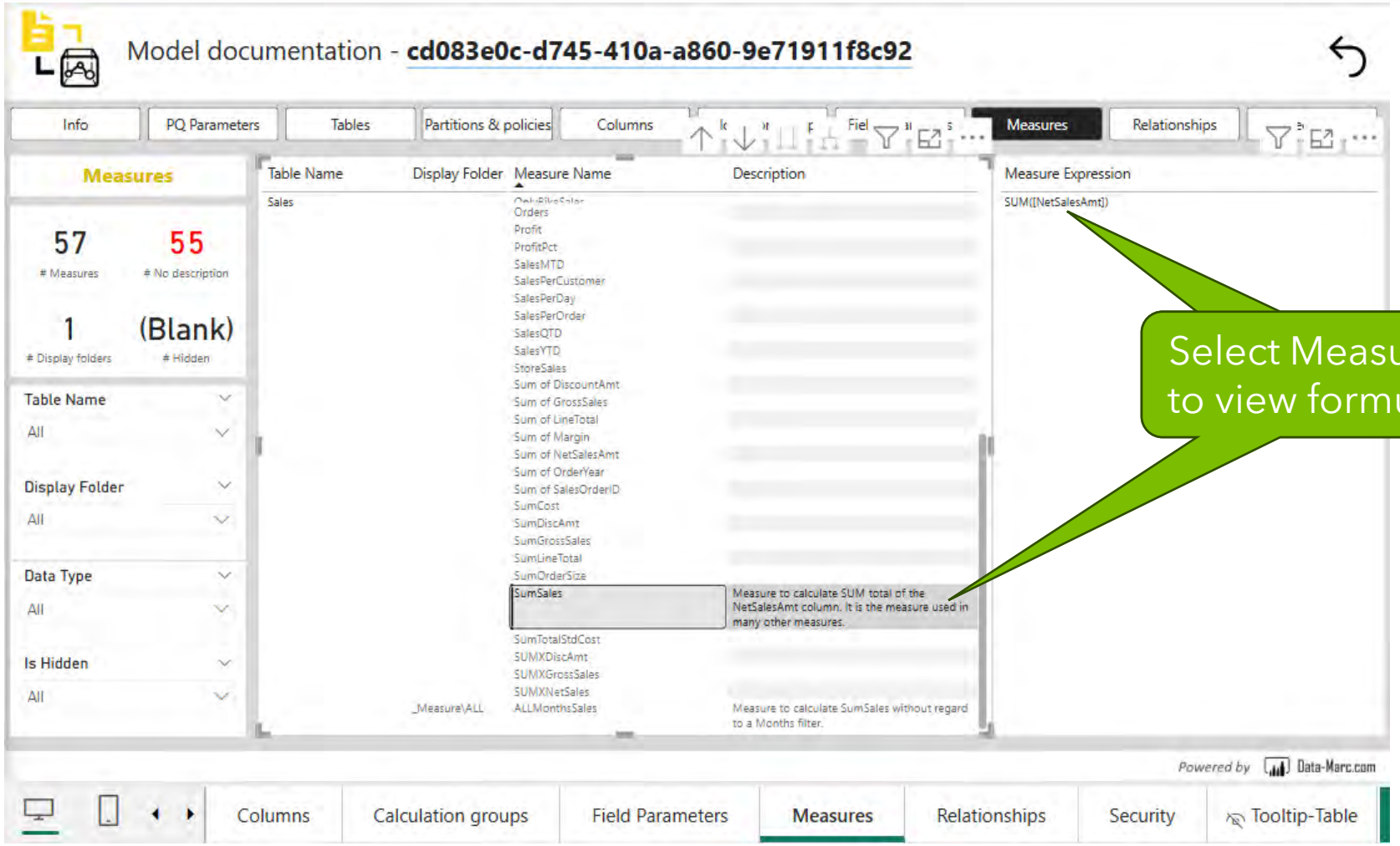

Model Documenter – Relationships

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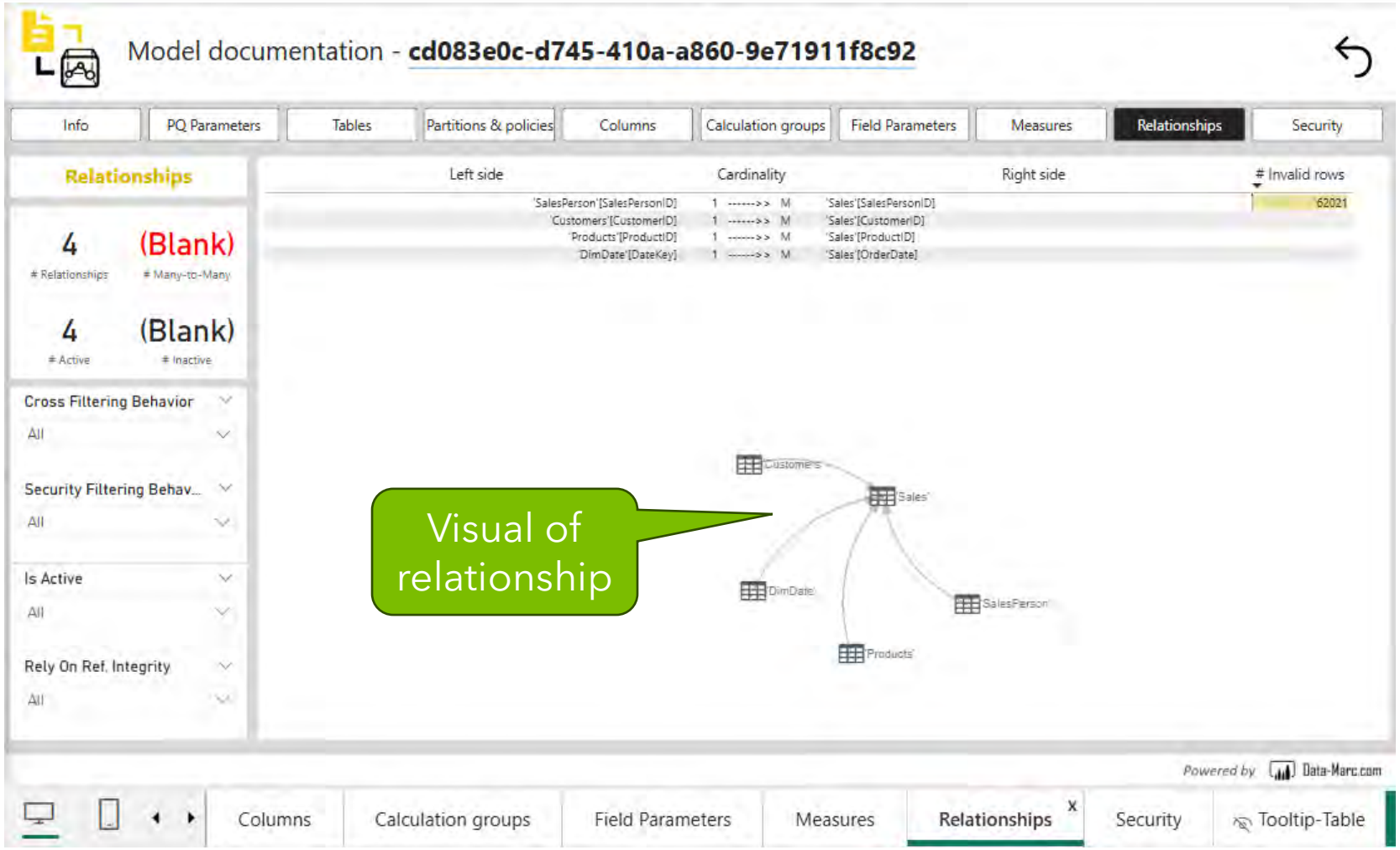

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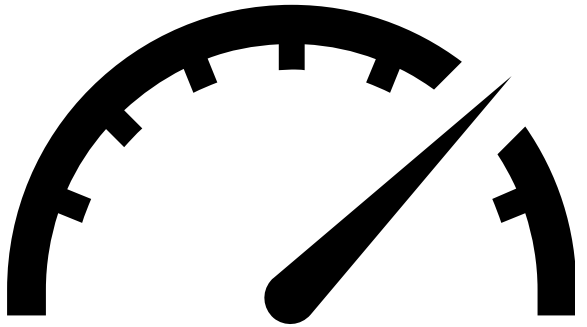
Best Practices for Performance Optimization



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Performance Optimization

Performance Optimization
(Repeat Slide)

- Remove unnecessary fields (columns) in dataset
- Remove unnecessary records (rows) in dataset
- Hide tables, columns & measures if not expected to use
- Create measure in place of value column
- Hide value columns where a measure is used to aggregate

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Remove Unnecessary Fields/Columns in Dataset

Remove in Power Query

- i.e. we removed MiddleName & TerritoryID in Customers
- Reduces size of data model

Becomes unavailable in data model

- Not needed for measures and/or calculated columns
- If needed in data model, can hide in data model

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Remove Unnecessary Records/Rows in Dataset

Filter in Power Query

- Old data
- Inactive customers, locations, products, etc.
- Include just records needed for analysis

Filter early so future Steps aren't refreshing data

Use data profiling tools

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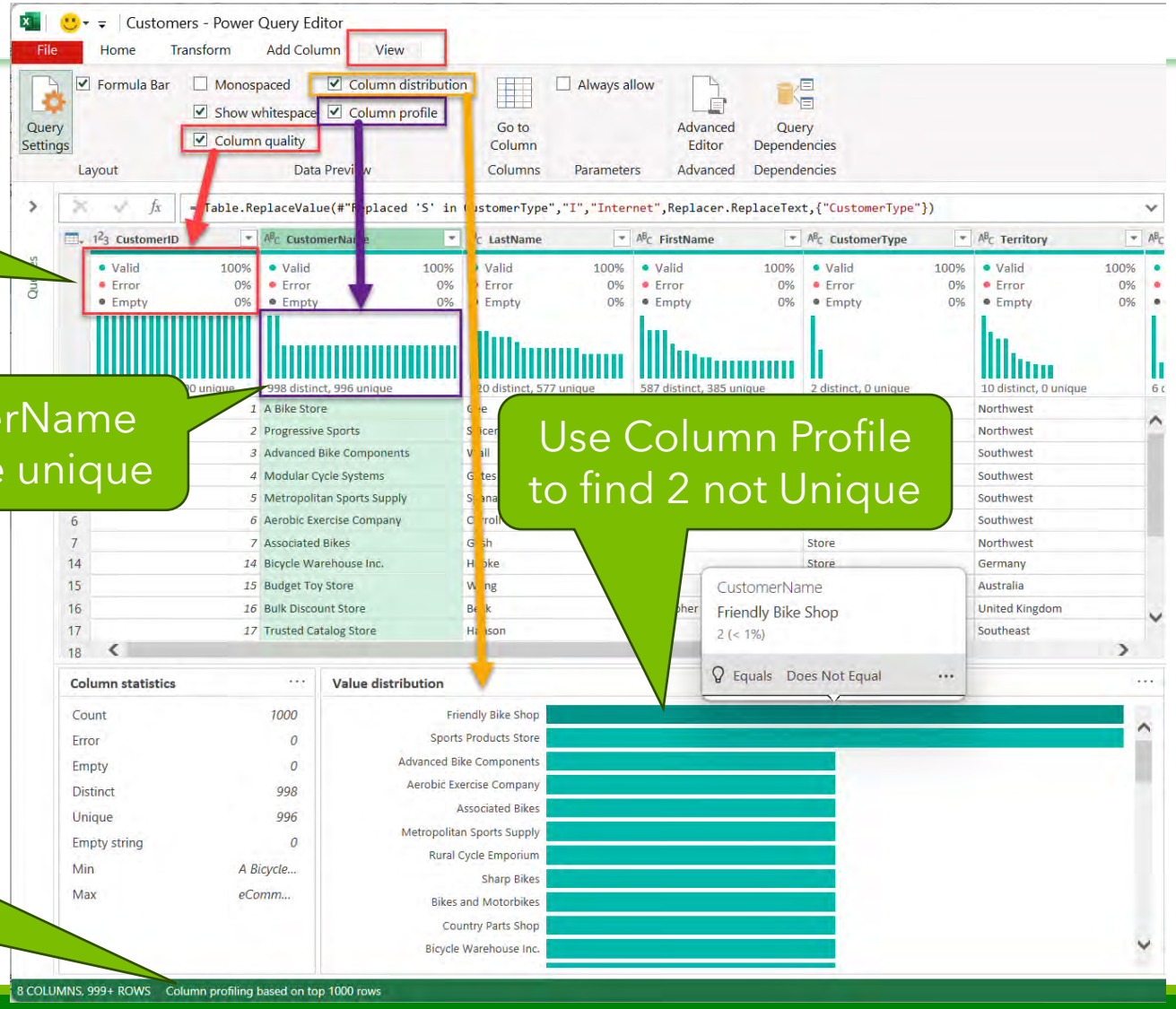
Data Profiling Tools



Records with errors or blank

CustomerName should be unique

Use Column Profile to find 2 not Unique

Only top 1000 records, click here to select entire data set

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Hide Tables, Columns & Measures, if not Expected to Use

In the Data Model

Hide from Client Tools

Can be used for calculations

Prevents users from selecting

- Eliminates confusion for users
- Removes from Q&A feature

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Create Measure in Place of Value Column

Value column added to visual is Implicit Measure

- Slower calculation - inefficient

Create measure which is Explicit Measure

- Faster calculation - efficient

Use "X" functions (i.e. SUMX) to perform row-by-row calculations

Use SUM function to create measure to add up value columns

- Then hide value column so users don't accidently use

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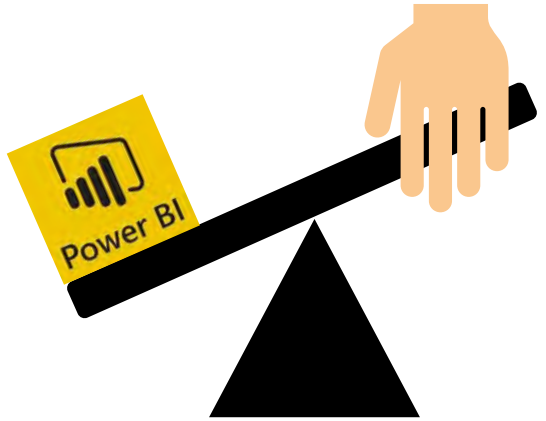
Leveraging Your Data Model Through PowerBI.com



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Local Files – Data Refresh & Sharing

Power Pivot

- Manual Refresh by selecting Data > Refresh All
- Share by emailing file or link to file

Power BI Desktop

- Manual Refresh by selecting Home > Refresh
- Share by emailing file or link to file

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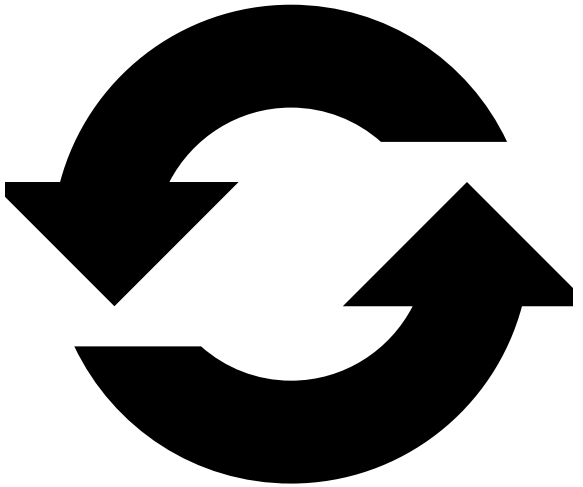
Data Refresh with PowerBI.com



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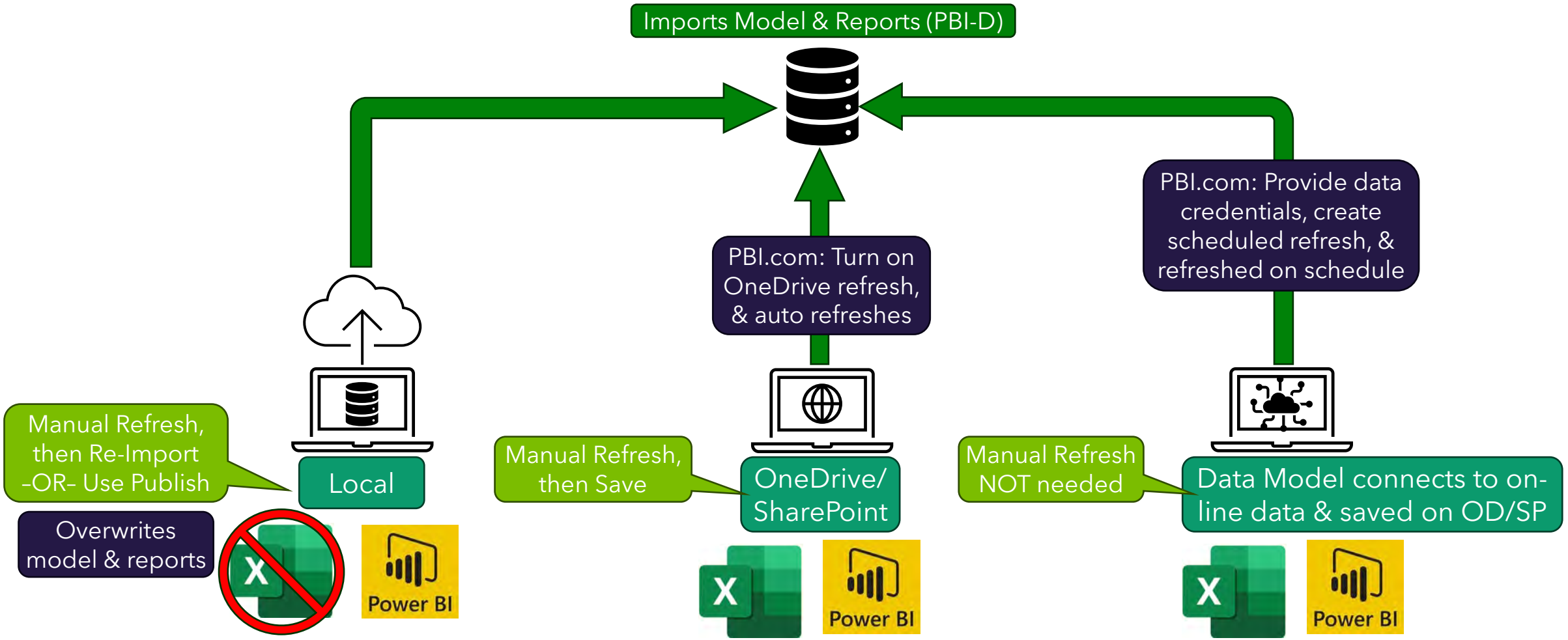
Data Refresh with PowerBI.com



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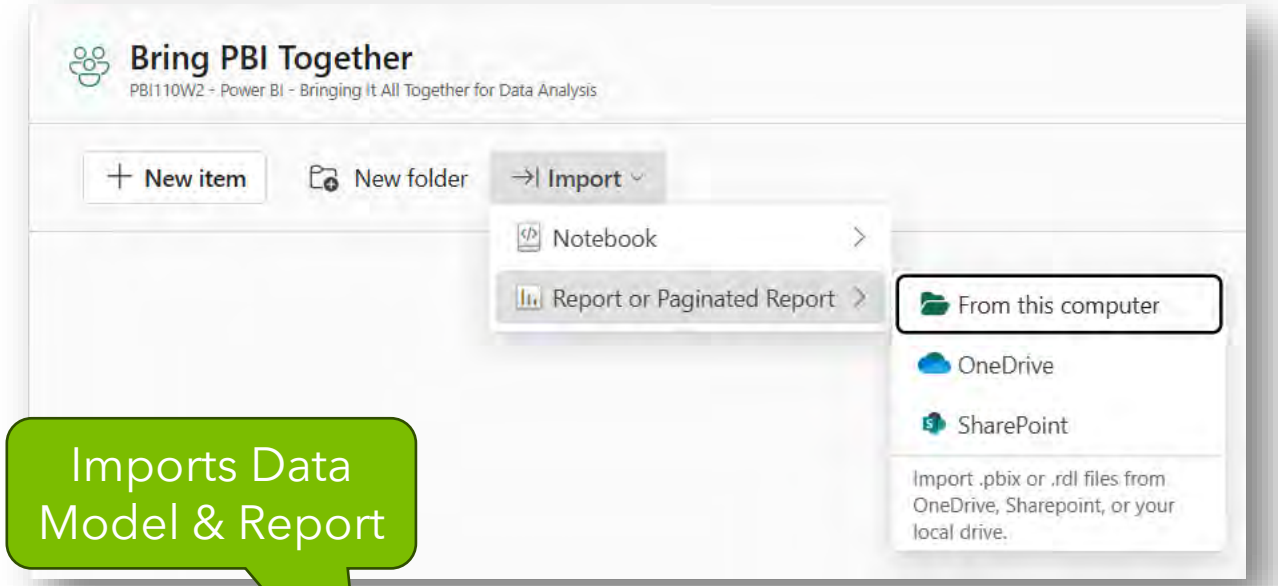
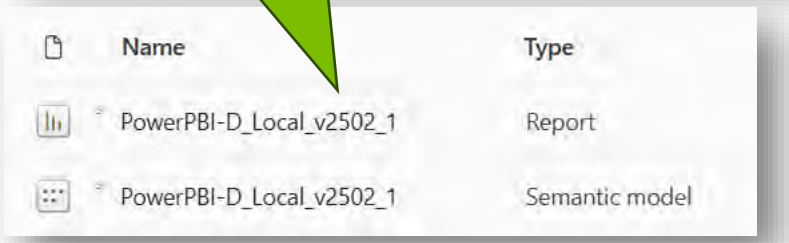
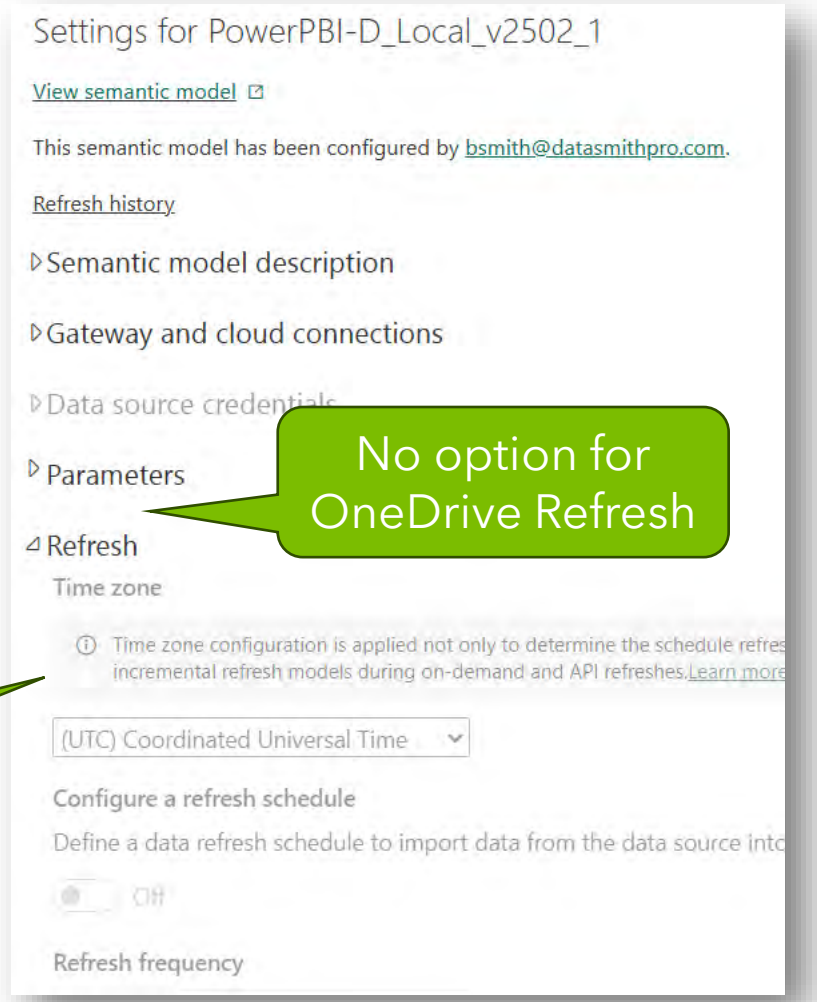
Import **Local .pbix** File
(info only, not recommended)



Imports Data Model & Report





No option for OneDrive Refresh

Scheduled Refresh NOT available

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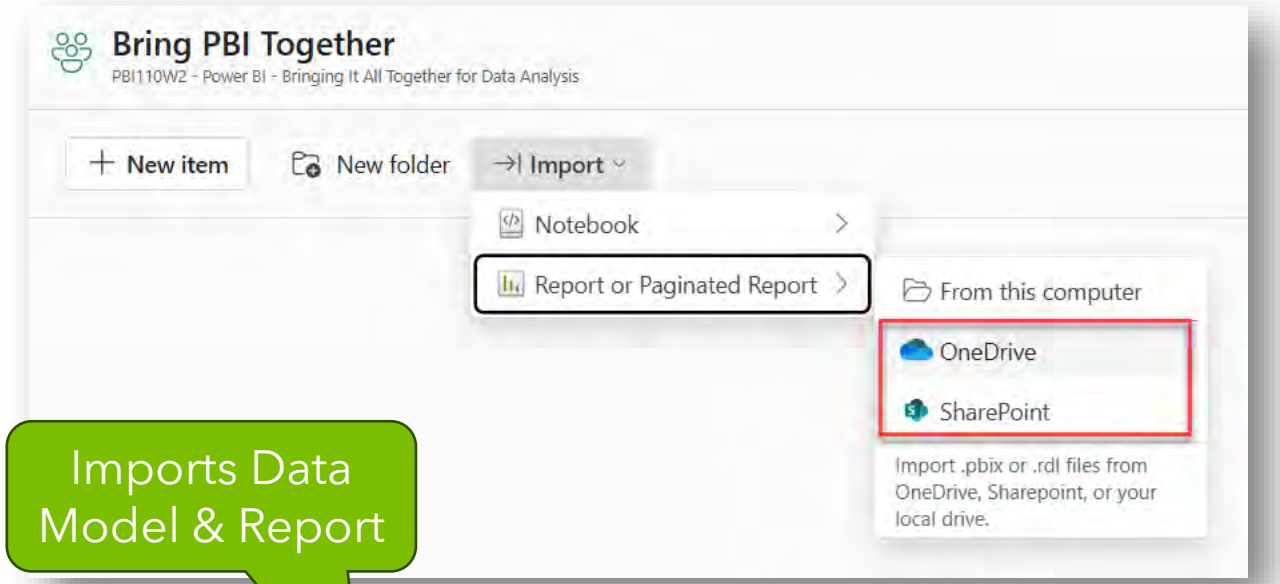
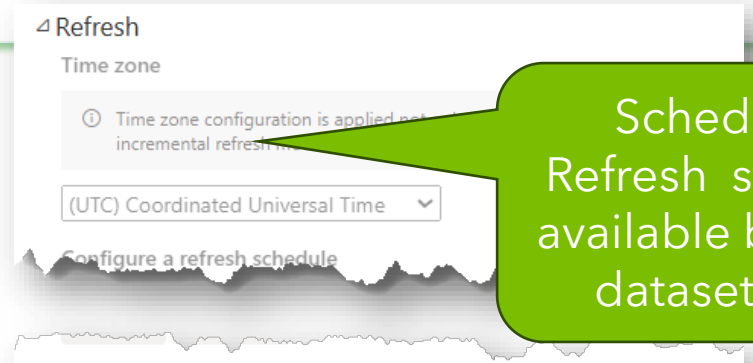
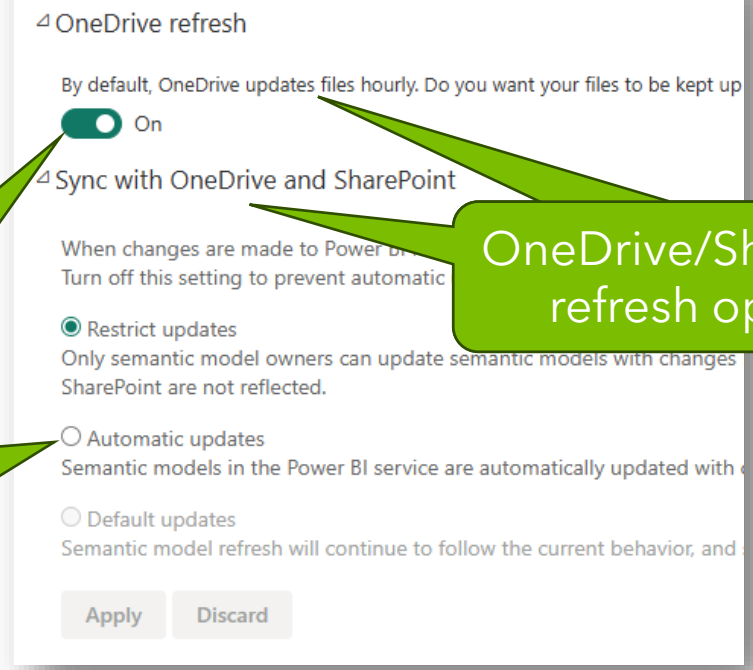
Import **OneDrive .pbix** File



Imports Data Model & Report



Scheduled Refresh still NOT available because dataset local



OneDrive/SharePoint refresh options

Note: This gets turned off if you don't select Automatic

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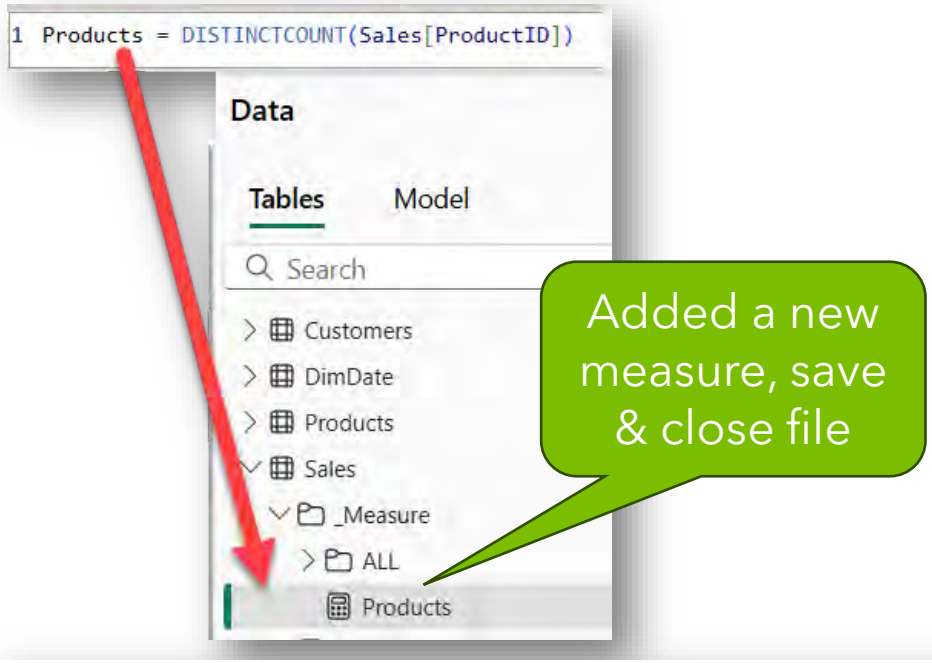
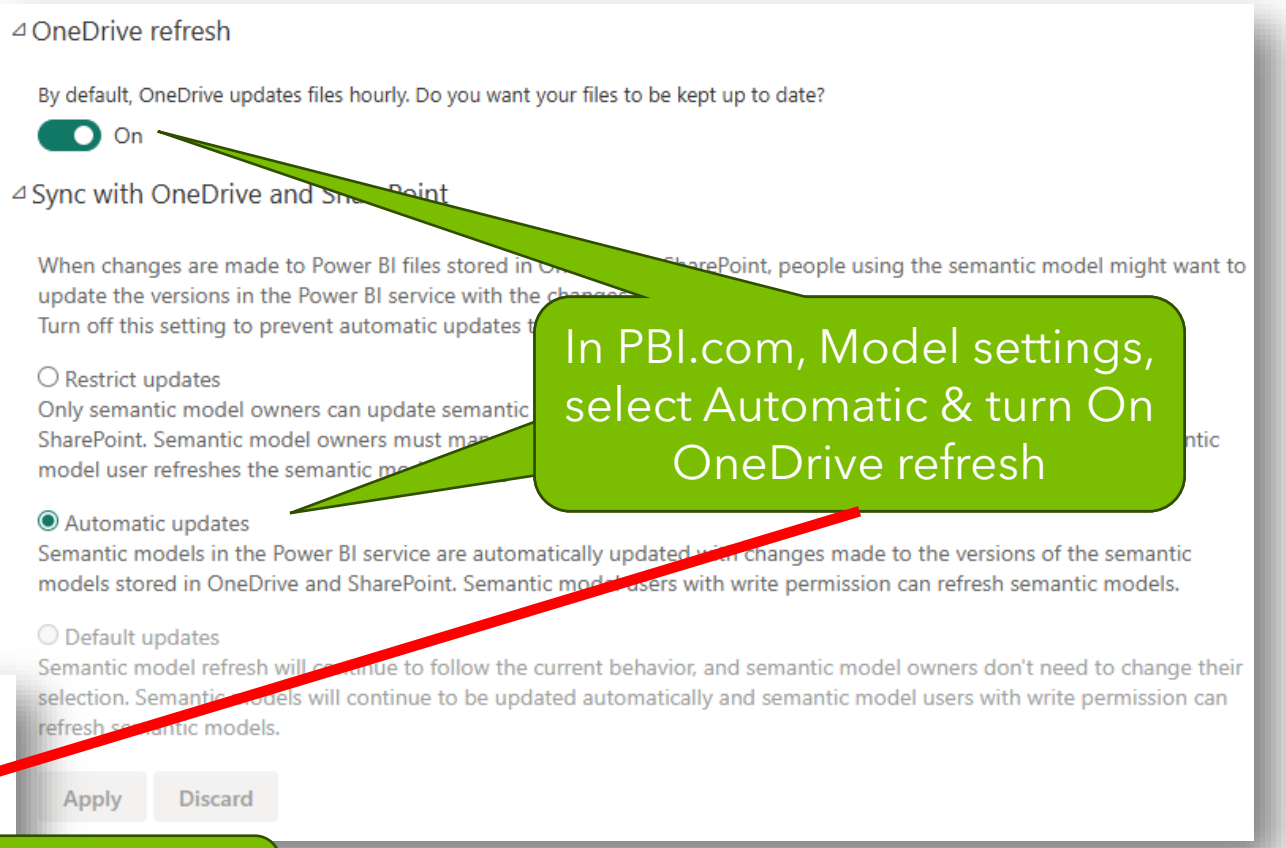
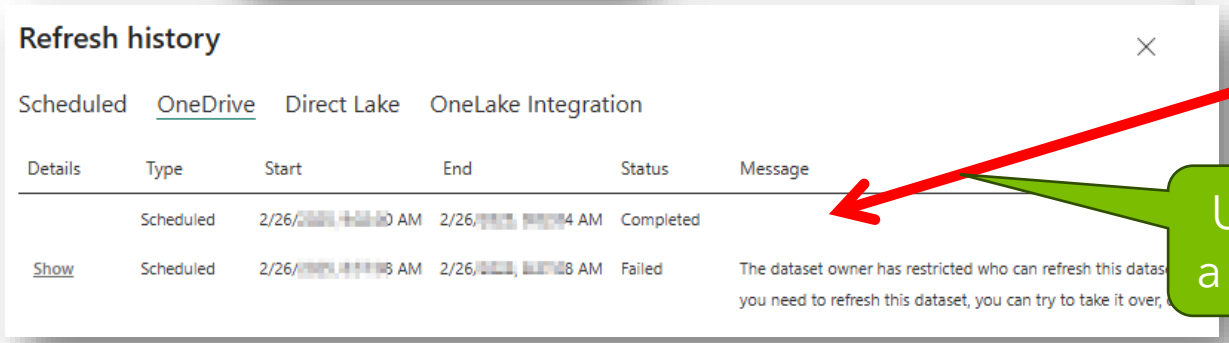
Auto Refresh



Added a new measure, save & close file



In PBI.com, Model settings, select Automatic & turn On OneDrive refresh



Updates is a short time

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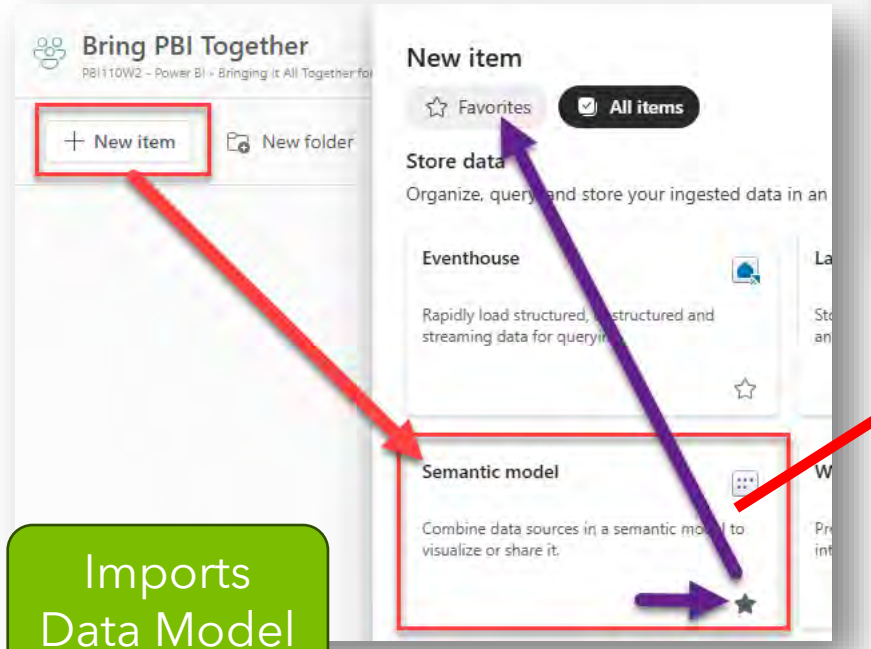
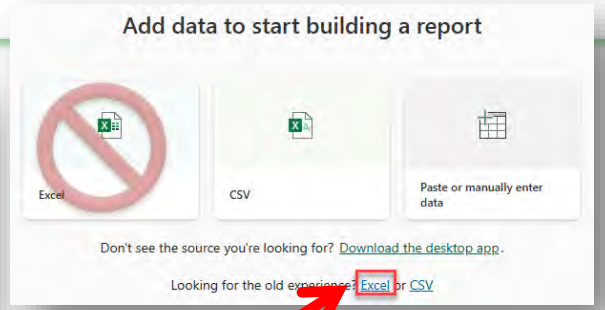
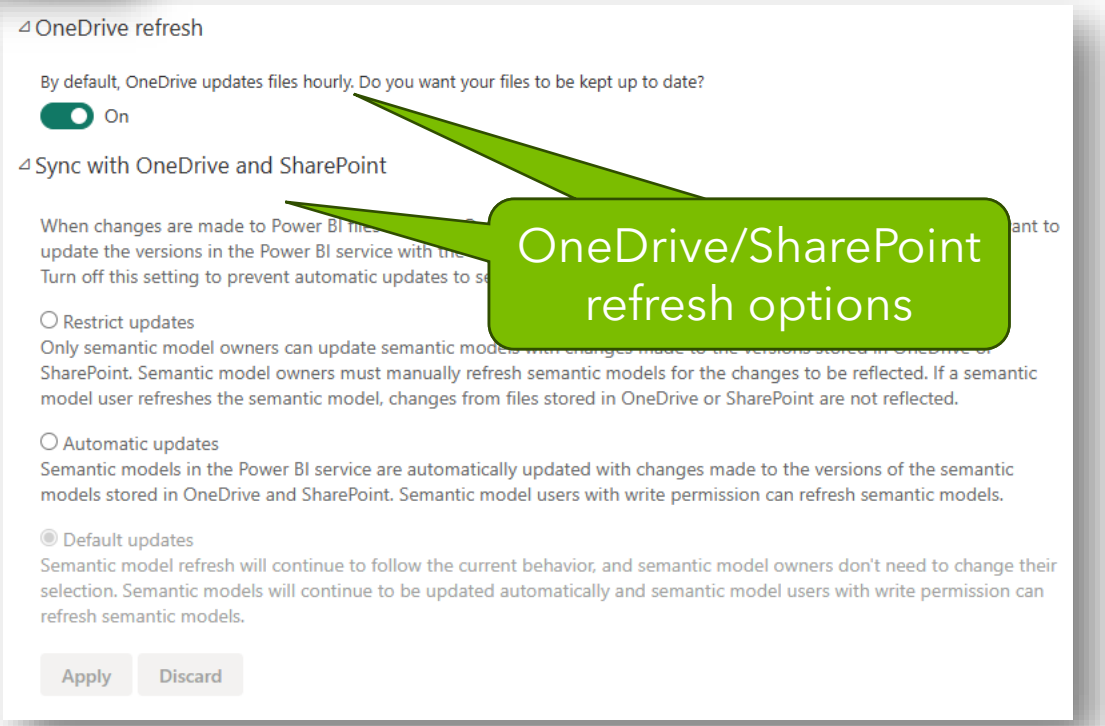
Import **OneDrive Power Pivot .xlsx** File





Imports Data Model



OneDrive/SharePoint refresh options

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All indications are Microsoft is moving away from building "shared" data models in Excel using Power Pivot. They want users to build these models in Power BI Desktop. As of the writing of this course, using shared Power Pivot data models is still available. If this feature gets removed, you can import your Power Pivot data model into PBI-D, connect that to PowerBI.com and connect Excel to the PowerBI.com Semantic Model via Get Data > For Power BI and then create PivotTables from the Semantic Model.

This would cause more work for Excel users, so let's hope Microsoft changes course!!

IMPORTANT NOTE: About Power Pivot (Excel) Data Models

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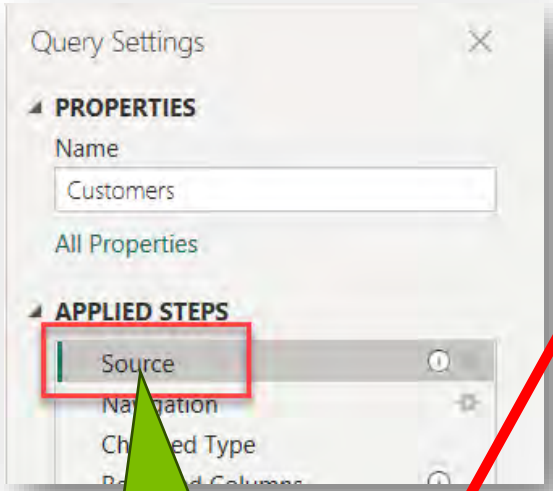
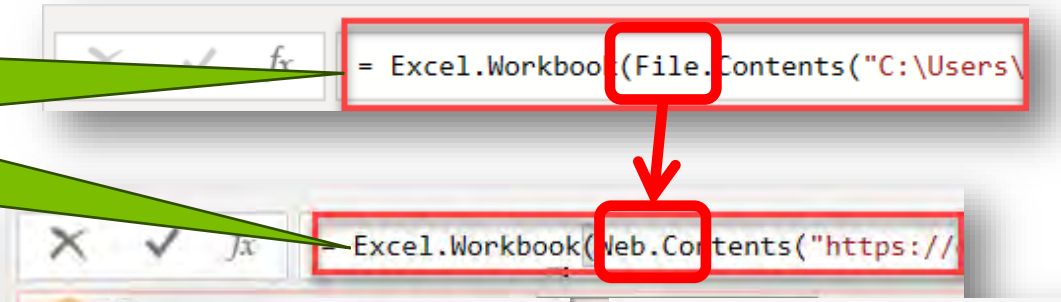
Connect Data Model to On-Line Data (Here, Excel files on SharePoint)

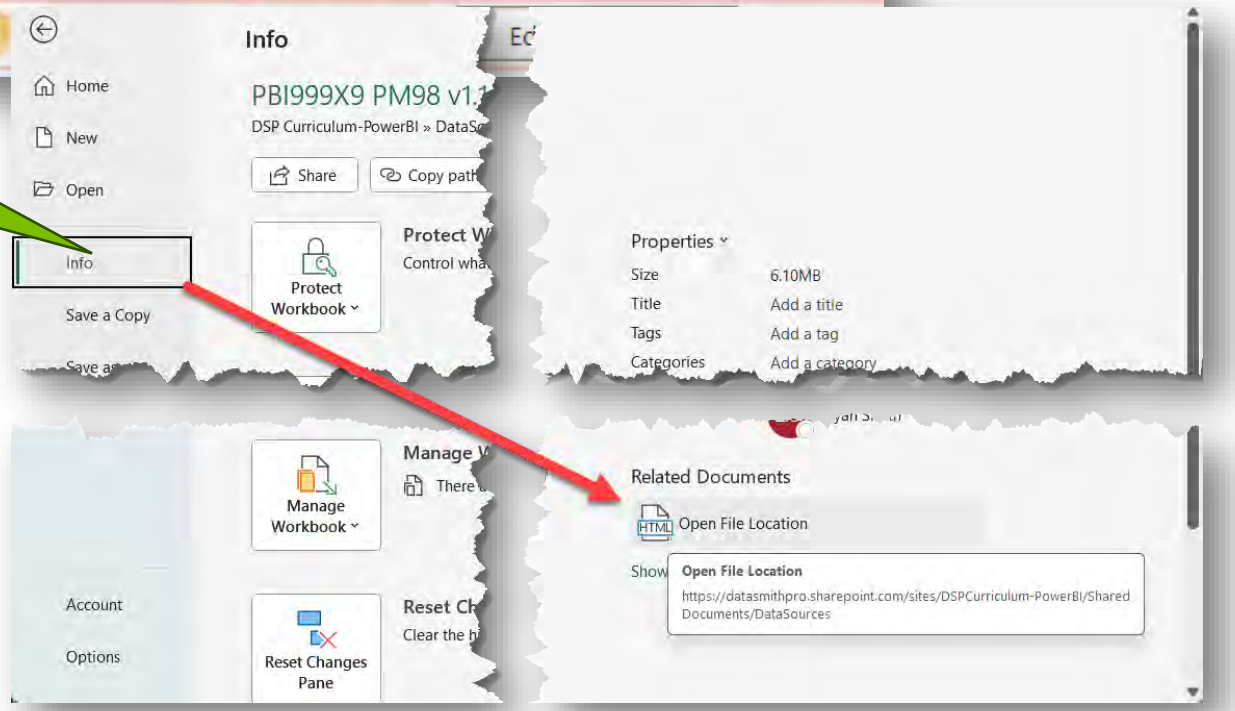


Open PQ, select Source

Change from local data connect to Web Connector



You will need data location; here is how to get Excel



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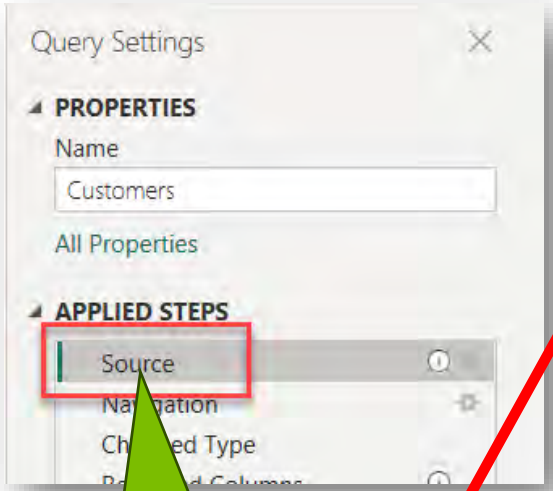
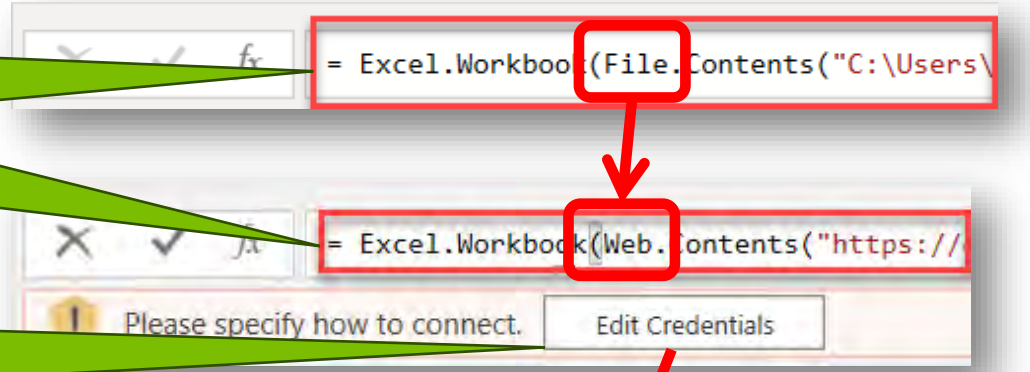
Connect Data Model to On-Line Data (Edit Credentials so data refreshes)



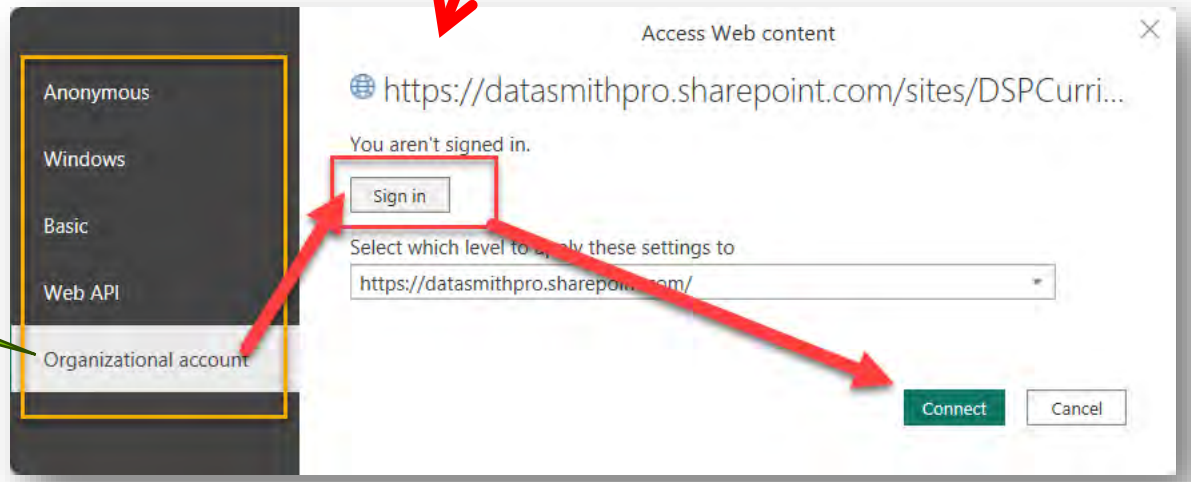
Open PQ, select Source

Change from local data connect to Web Connector



You will have to Authenticate to source

Here, I will use my M365 account



Change ALL Query Sources, Close & Apply, Save to OD/SP

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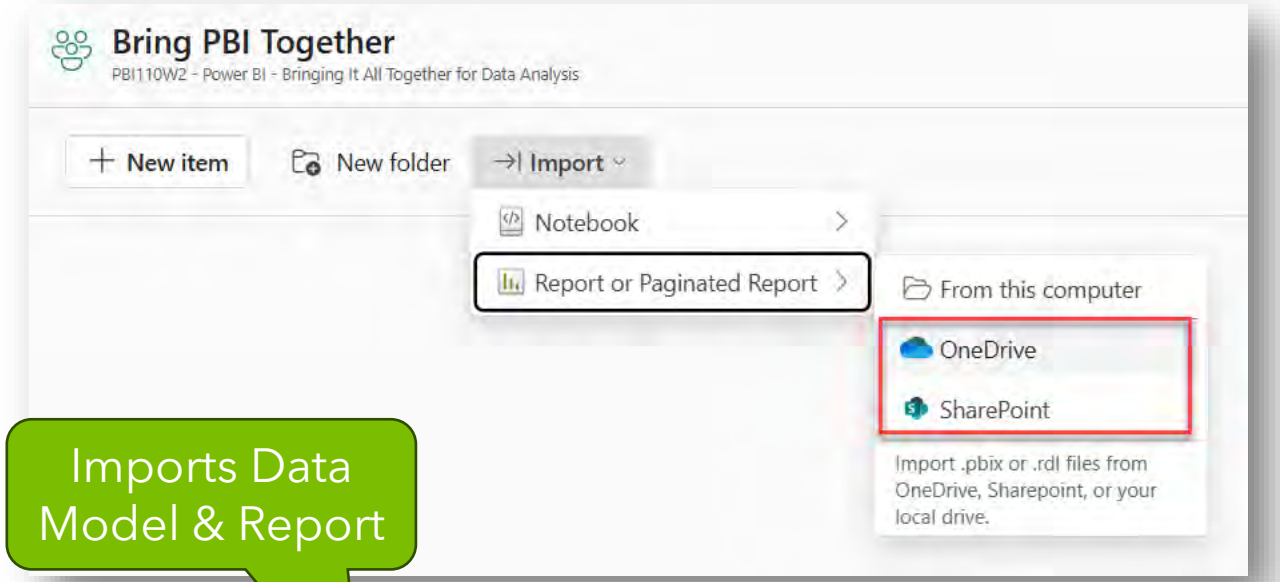
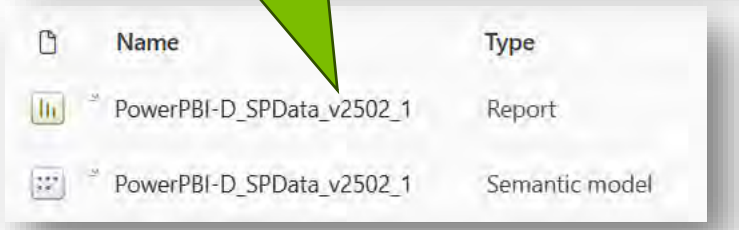
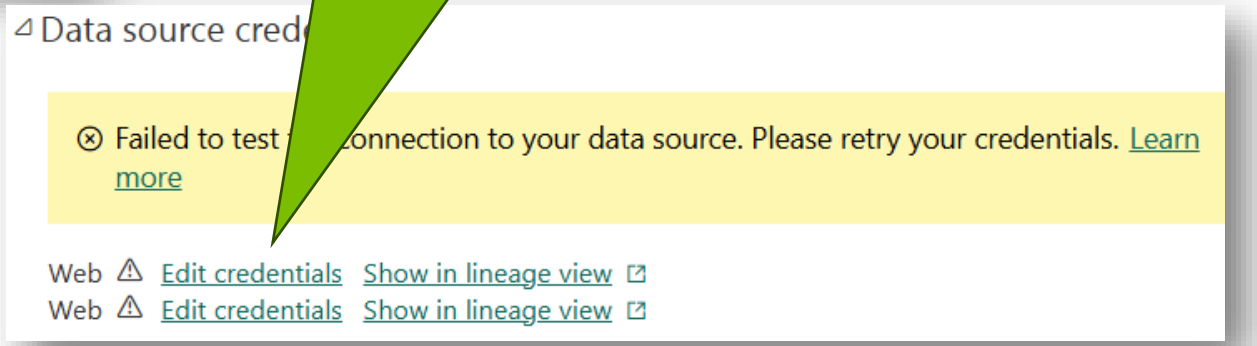
Import ***OneDrive .pbix*** File, with **Data Connected to SharePoint Data**



Imports Data Model & Report



Every unique data connector will need credentials for Scheduled Refreshes



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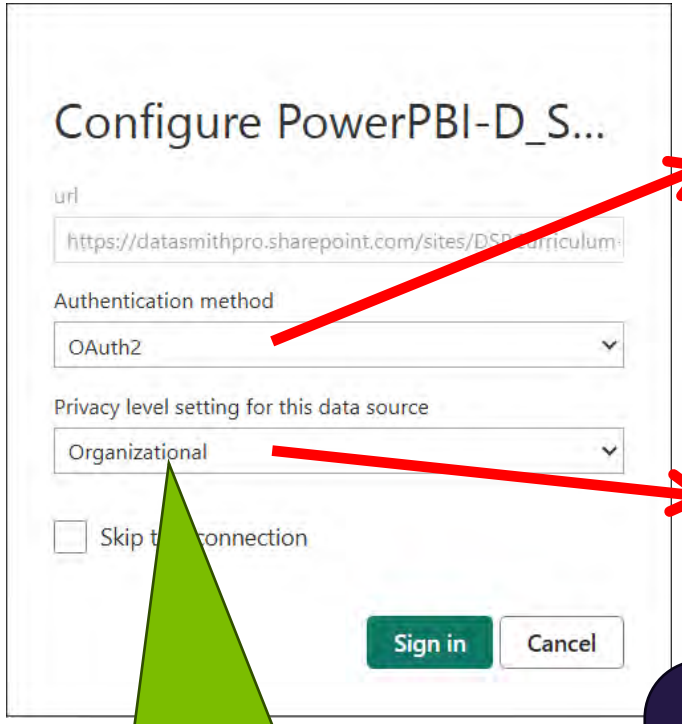
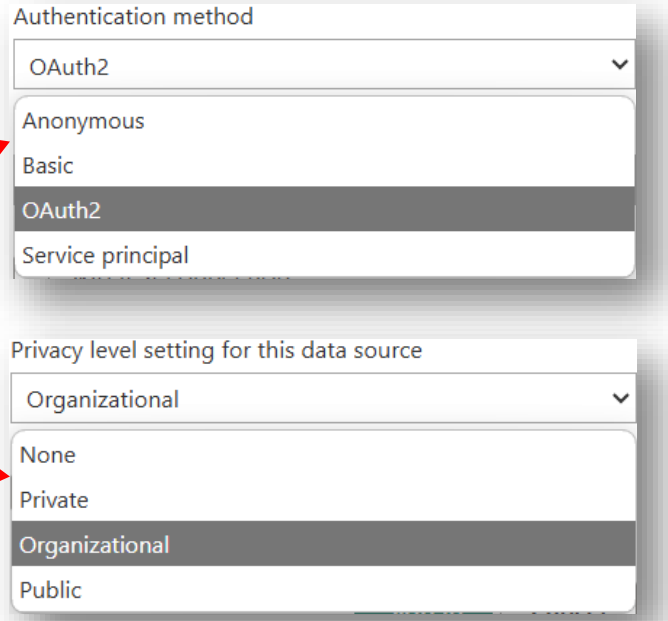
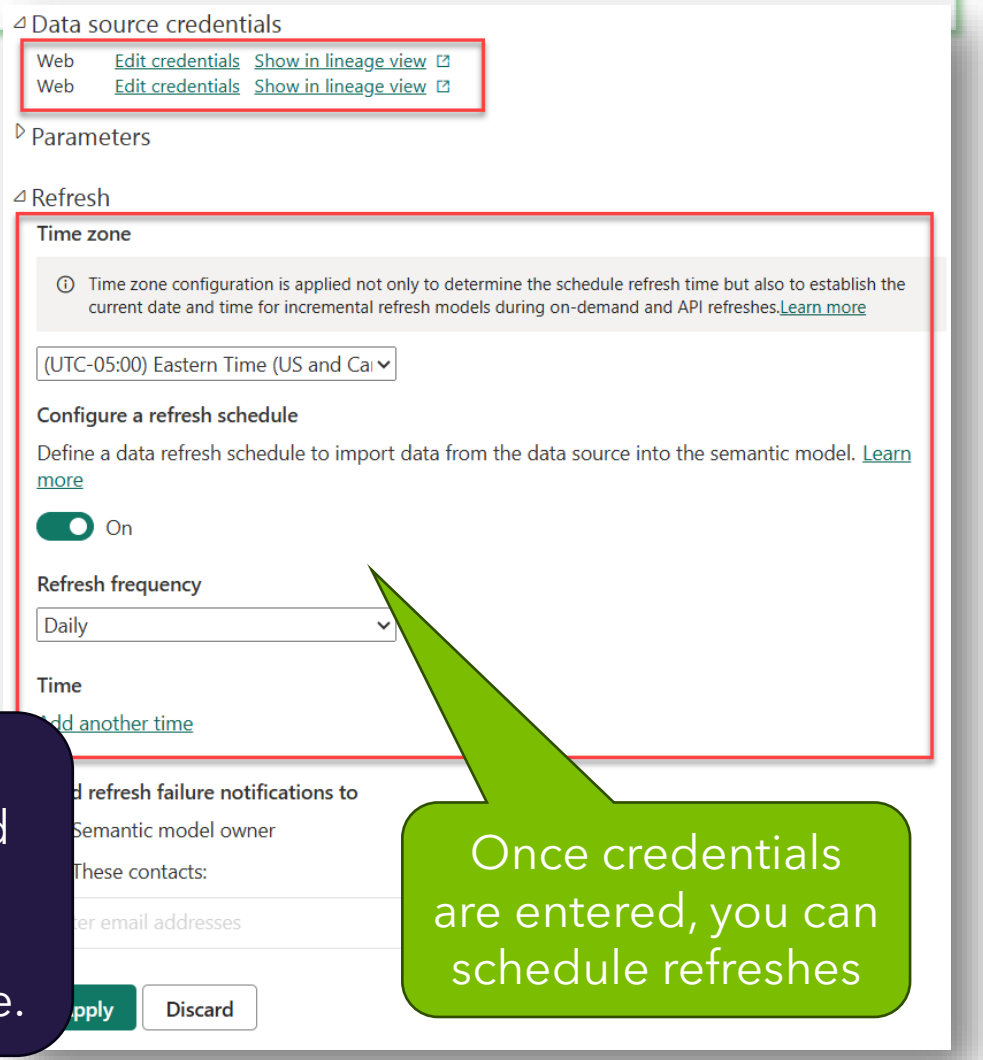
Data Source Credentials







Authentication depends on data source

These screenshots **are not** a recommendation for which method to choose, you **MUST** research proper authentication based upon your organization's data governance.

Once credentials are entered, you can schedule refreshes

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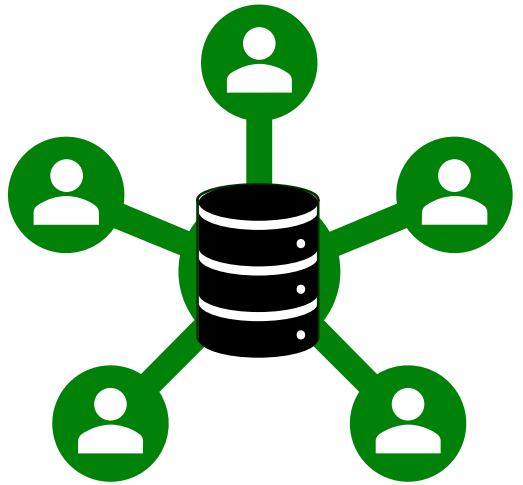
Sharing with PowerBI.com



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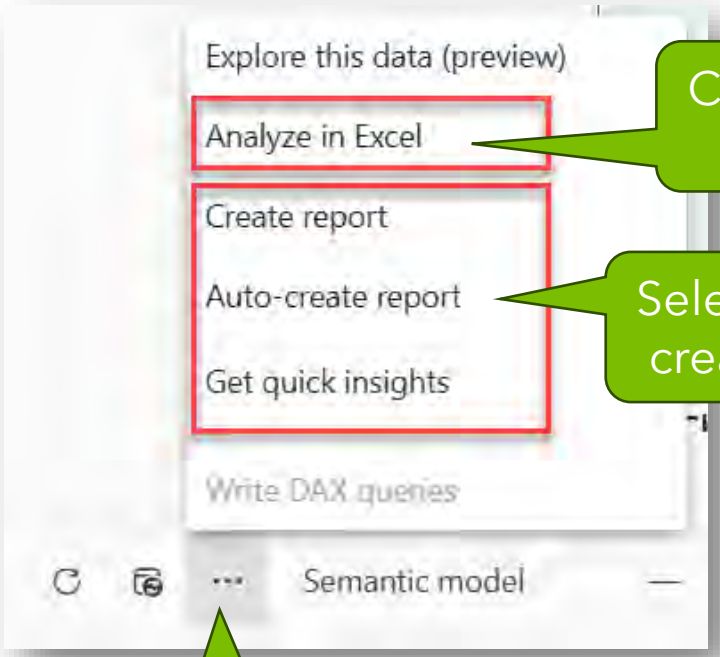
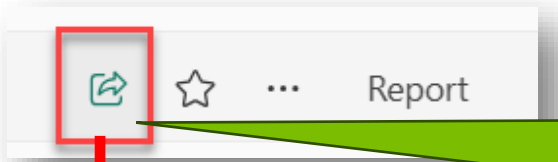
Create Reports from Semantic Model



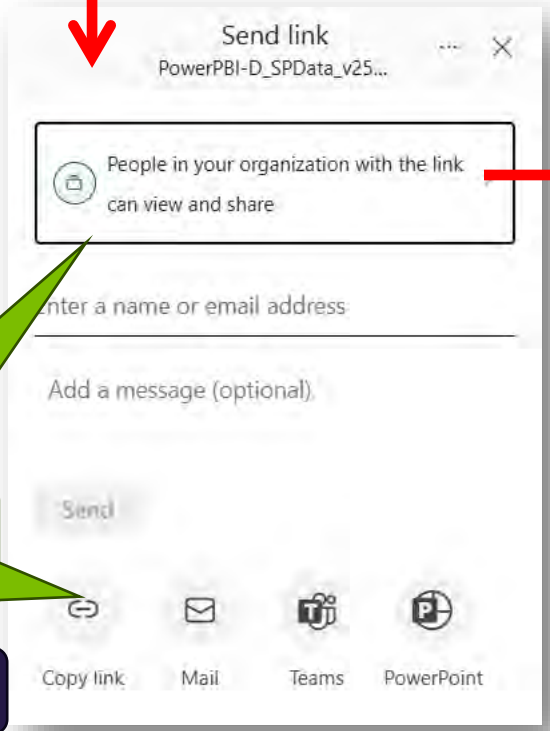
Create PivotTables in Excel

Select option to create a report

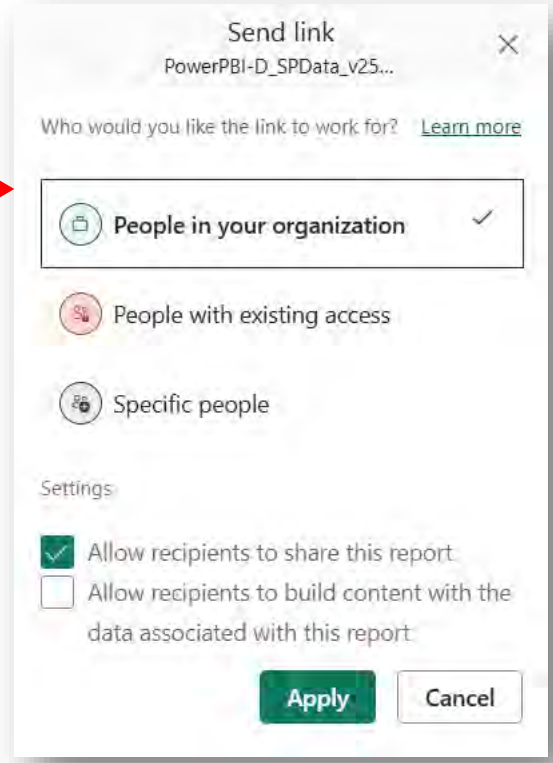
Select … to open menu



Once Report is created, select Share icon



Share options and permissions



Sharing requires Power BI Pro license

Create an App to Share Content Without Giving Access to Workspace

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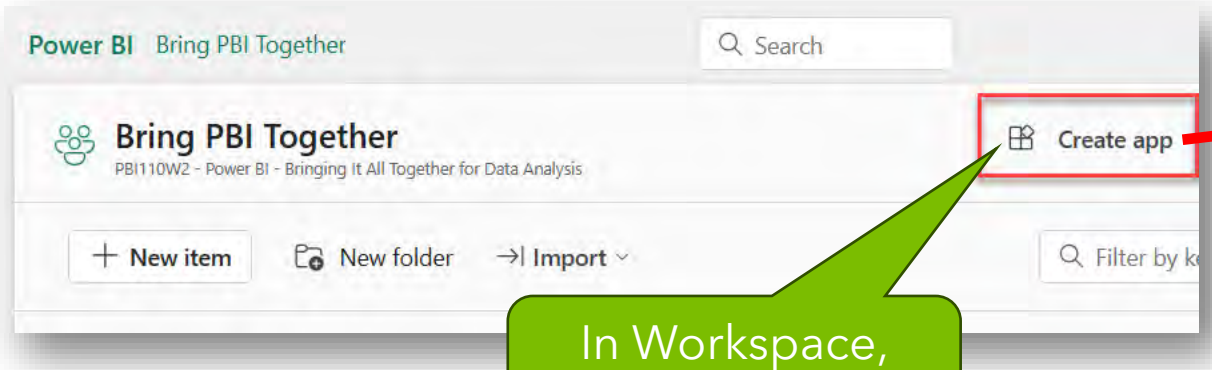
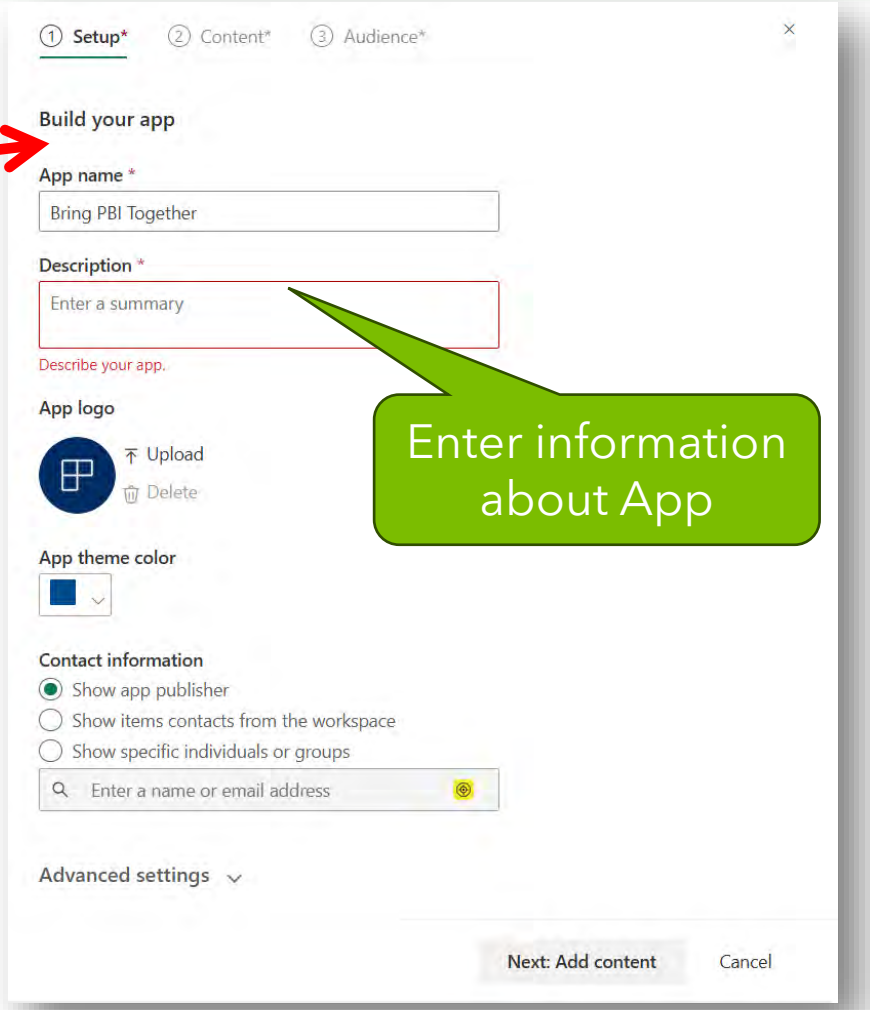


In Workspace, select Create App



Enter information about App

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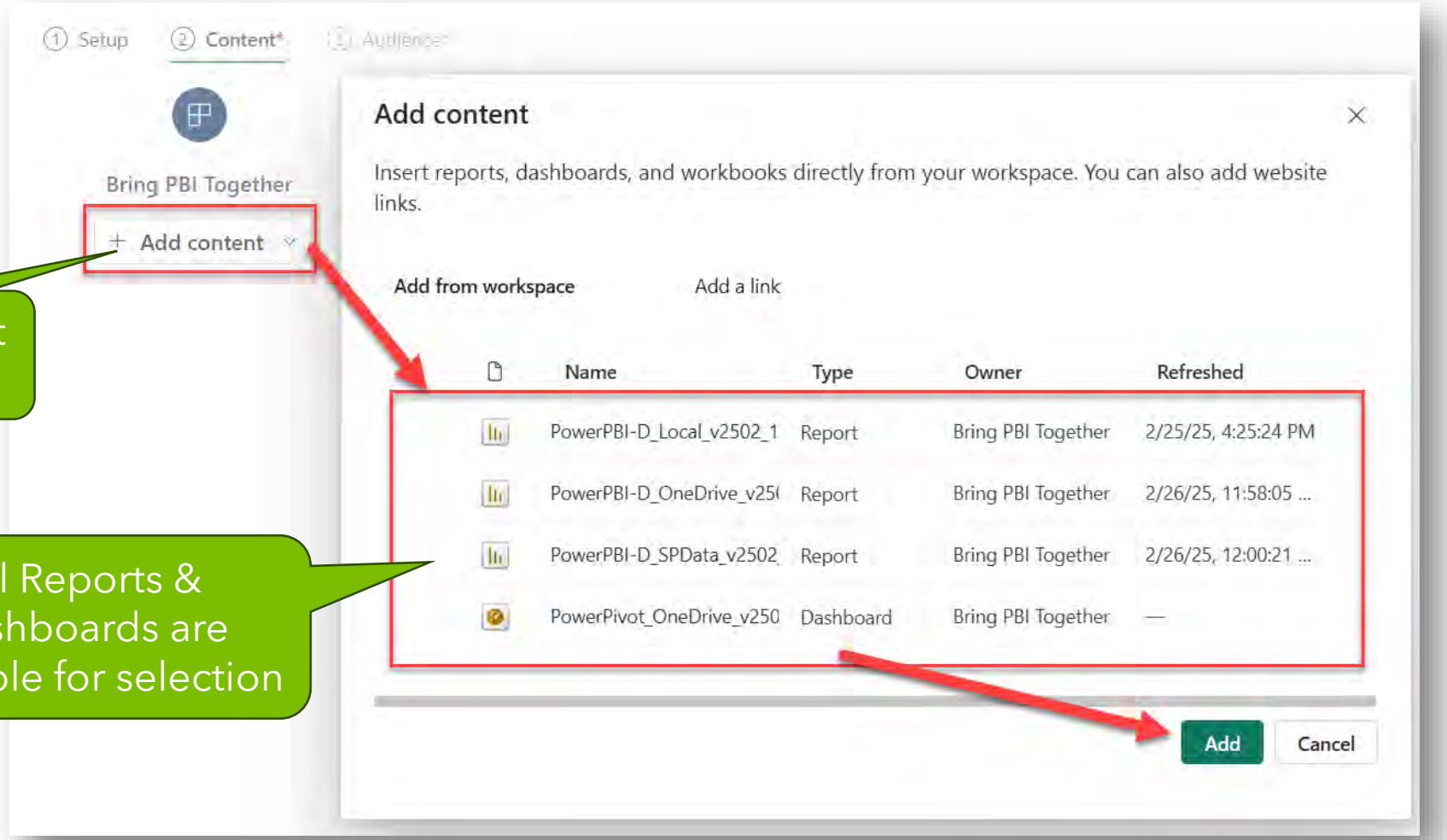
Add Content to the App



Add content to app

All Reports & Dashboards are available for selection

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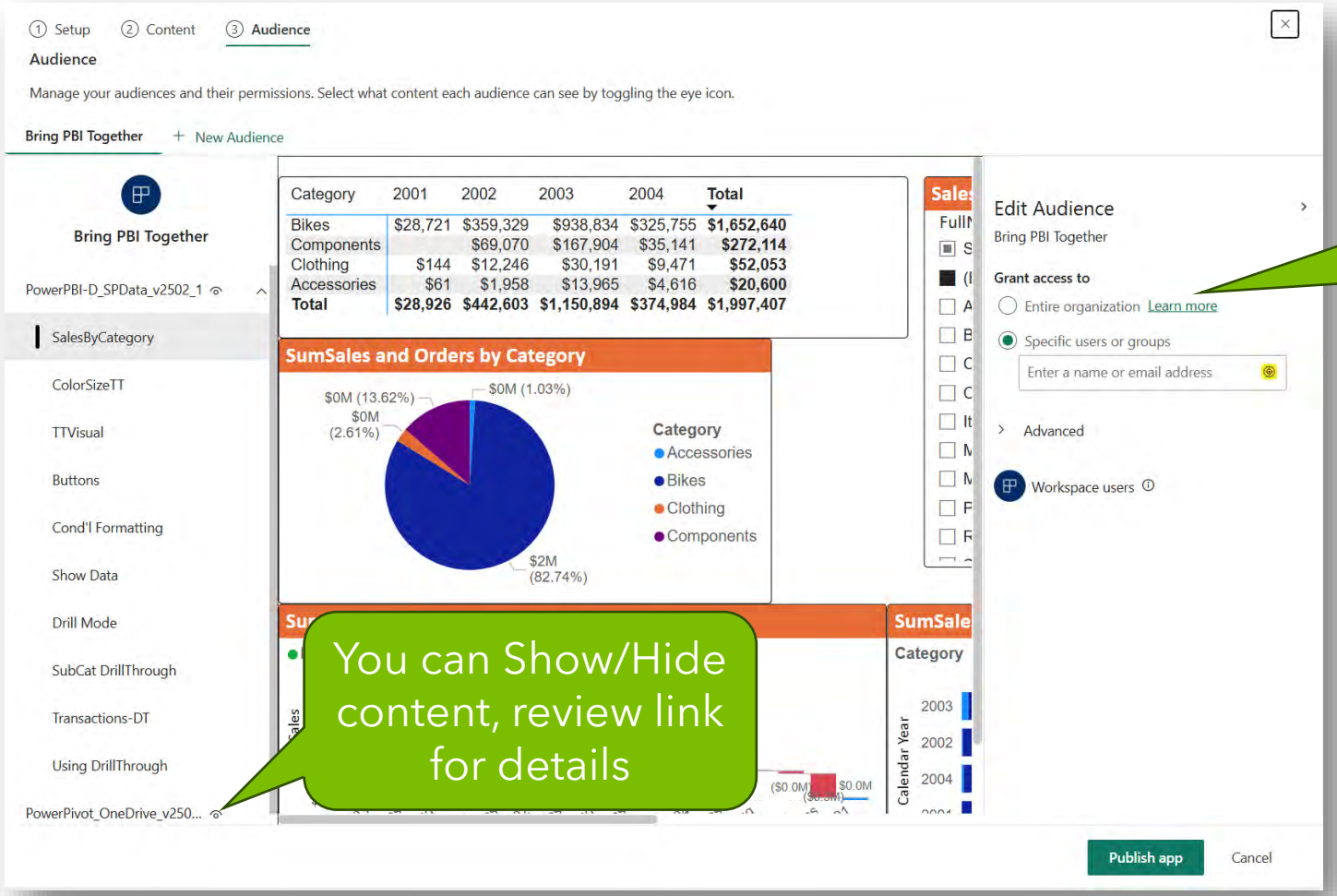
Create Audience(s)



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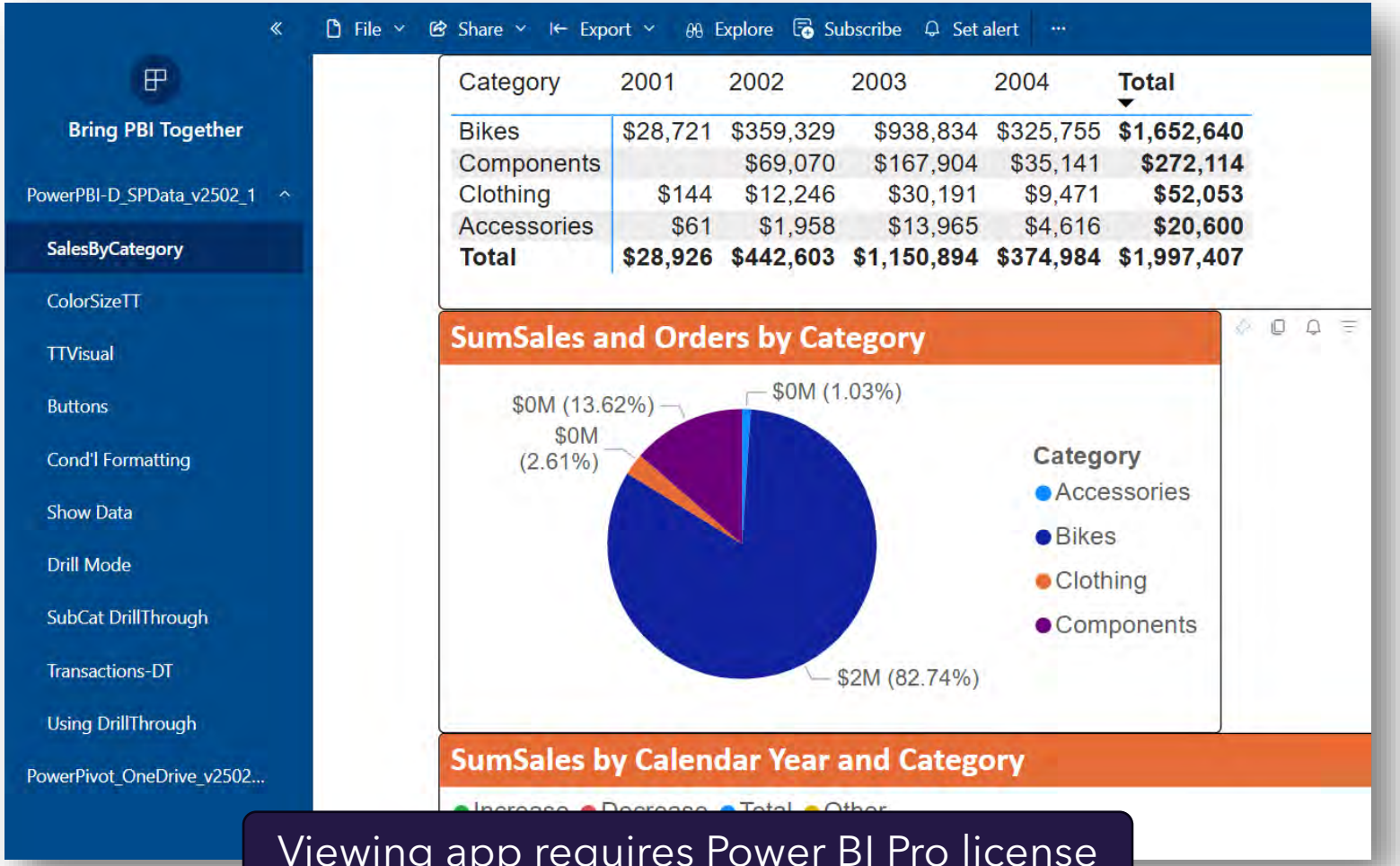
Published App – User View



Viewing app requires Power BI Pro license

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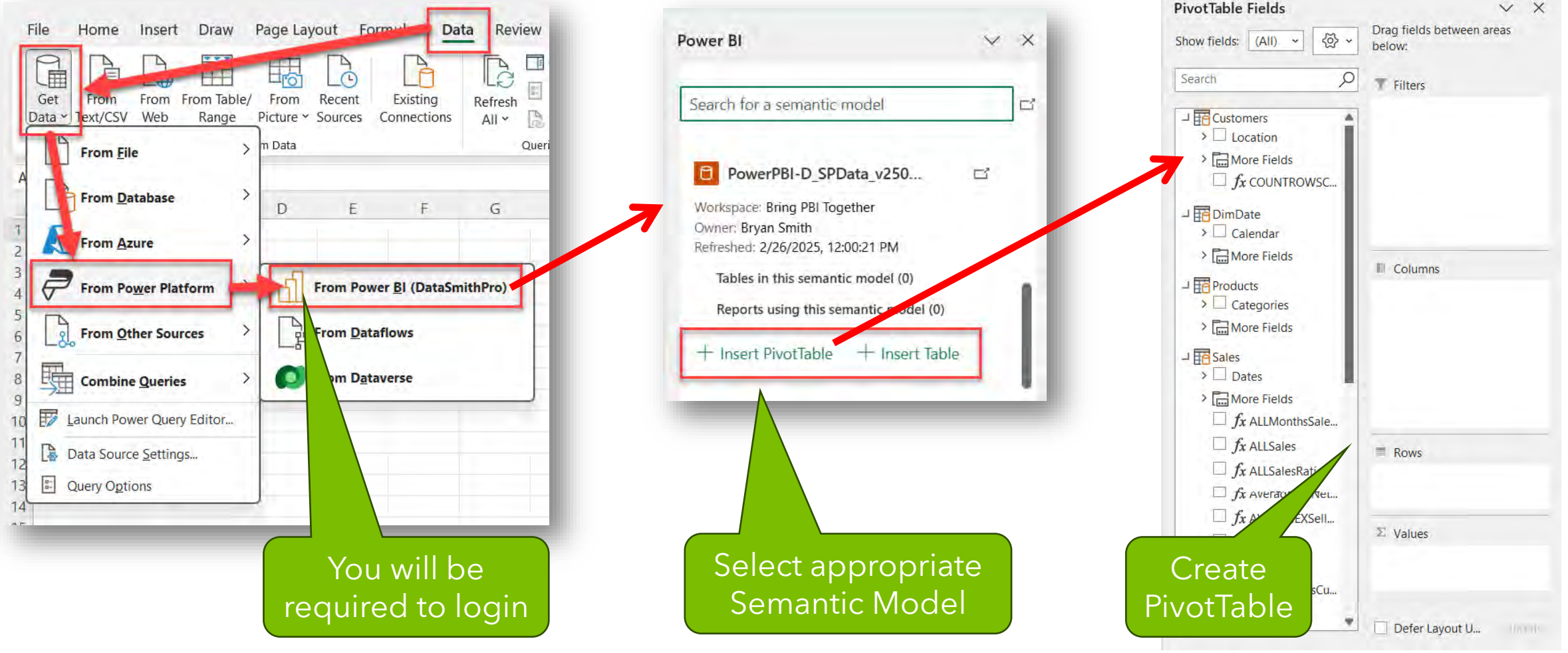
Access PBI.com Data Model in **Excel**



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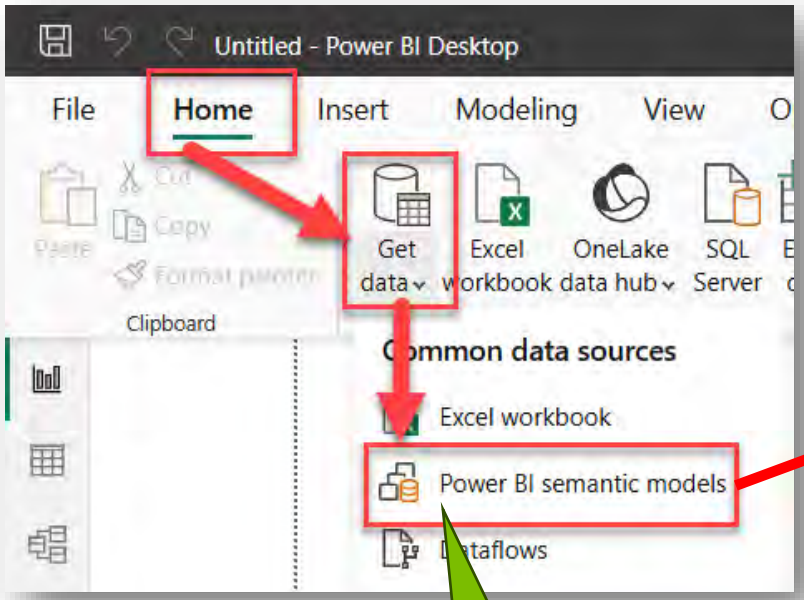
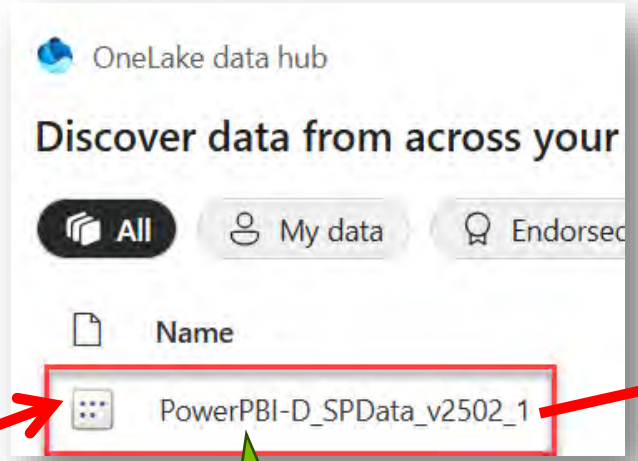
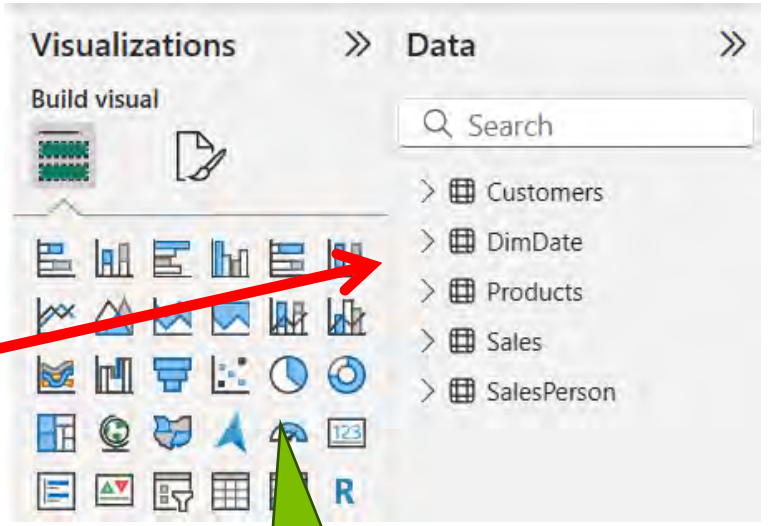
Access PBI.com Data Model in **Power BI Desktop**







You will be required to login

Select appropriate Semantic Model

Create visuals

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Other Collaborations with PowerBI.com

- Power BI's Analyze in Excel
- Power BI in Teams
- Power BI in PowerPoint
- Power BI and Power Automate
- Power BI semantic models with external users

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Wrap-Up

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Presentation Wrap-Up

Our Power BI Workflow should include:

Documenting our data model

Determining our "use" scenarios

Optimizing our data model

Leverage PowerBI.com to automate refresh and share:

- Analysis
- Data Models
- Reports

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Questions?

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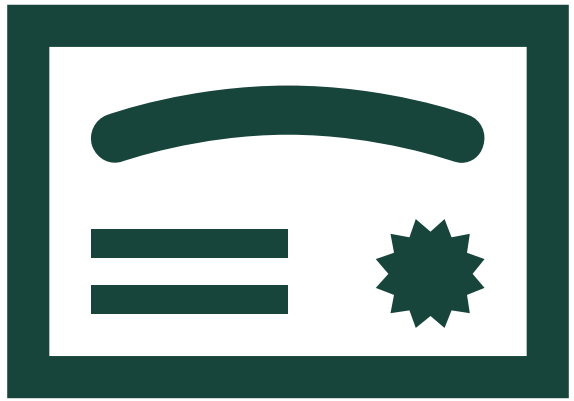

Thank You!!

Bryan L. Smith, CPA.CITP, CISA

bsmith@datasmithpro.com

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ONE FINAL NOTE

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Cryptocurrency at 15: What CPAs Should Know Now

Set your browser to

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For interactive polling and Q & A

Presented By
John H. Higgins, CPA.CITP
Rochester, Michigan

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Learning Goals

- Recognize the current state of the cryptocurrency marketplace
- Identify key developments in cryptocurrency technology

Set your browser to

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John H. Higgins, CPA.CITP

Strategic Technology Advisor

john@higginsadvisoryllc.com

- Nationally recognized thought leader, advisor, author and speaker on CPA technology
- Strategic technology advisor to the profession w/ 35+ years of experience
- Founded and sold two CPA technology advisory startups
- Former National Mid-market Technology Partner - BDO
- CPA Practice advisor Top 25 Thought Leader for the CPA profession
- AICPA Business & Industry Hall of Fame Inductee
- Past Chair of the Michigan Association of CPAs
- Passionate advocate for the CPA profession!

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Presentation Outline

- Cryptocurrency Market Update
- Cryptocurrency Technology Update
- Legislative and Regulatory Update
- Wrap-up

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Things to Know About Cryptocurrency

- Cryptocurrency market cap as of Oct 2025 - $3.7 trillion
- Bitcoin is the only 100% decentralized cryptocurrency
- SEC considers Bitcoin a commodity, all other crypto is treated as a security
- SEC authorized multiple Bitcoin ETFs (exchange traded funds) in 2024
- Ethereum is primarily used for “smart contracts”
- FASB ASU 2023-08 permits recording cryptocurrency at fair market value
- GENIUS Act provides regulatory certainty for stablecoins in the U.S.

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Digital Assets

- Any asset that exists in digital form
- **Cryptocurrencies:** Digital currencies that use cryptography for secure transactions and operate on decentralized networks (e.g., Bitcoin, Ethereum).
- **Stablecoins:** Cryptocurrencies designed to maintain a stable value by being pegged to a fiat currency or other assets (e.g., USDT, USDC).
- **Non-Fungible Tokens (NFTs):** Unique digital tokens that represent ownership of a specific item or piece of content, often used for digital art and collectibles.
- **Central Bank Digital Currencies (CBDCs):** Digital versions of a country's fiat currency issued and regulated by the central bank.
- **Security Tokens:** Digital assets that represent ownership in a real-world asset, such as stocks or real estate

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CRYPTOCURRENCY MARKET UPDATE

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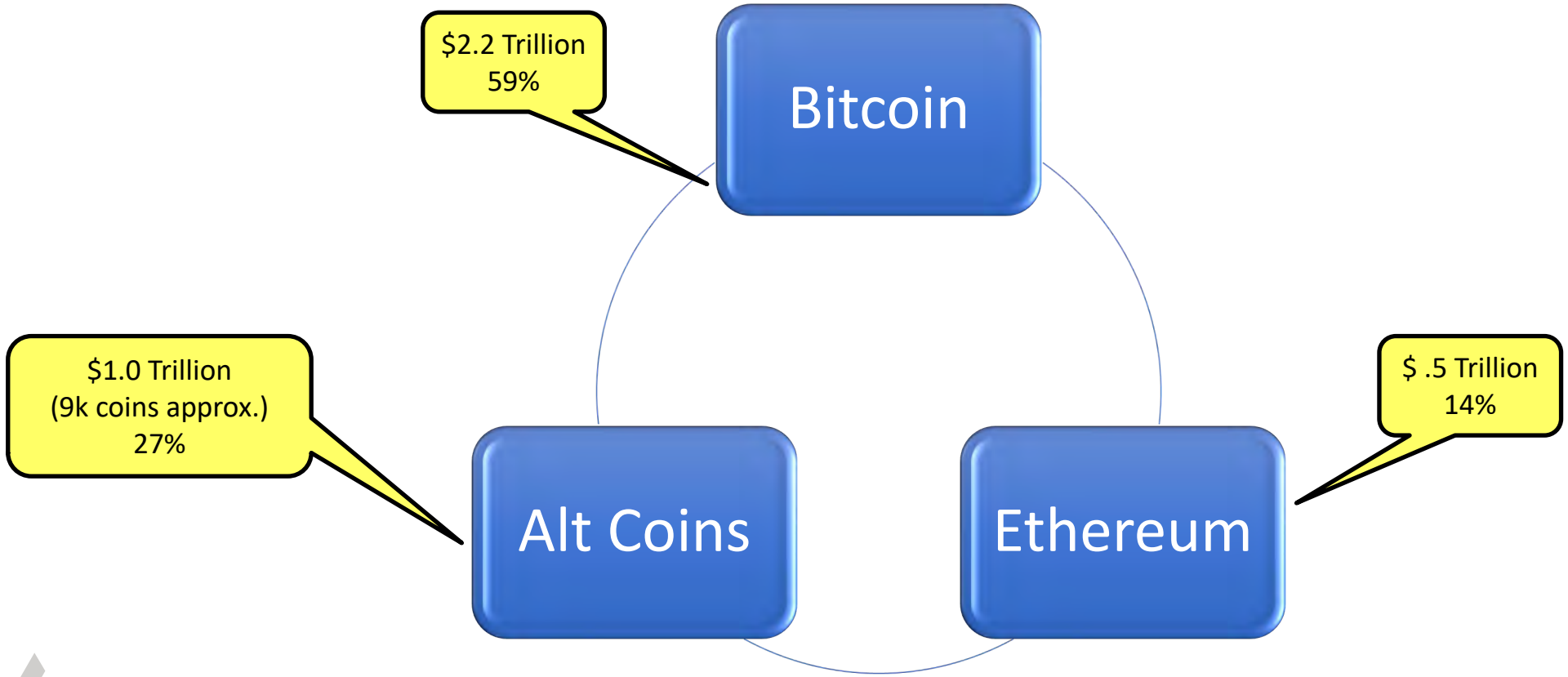
Bitcoin, Ethereum & Alt Coins – Market Cap



Source: coinmarketcap.com 10/20/25

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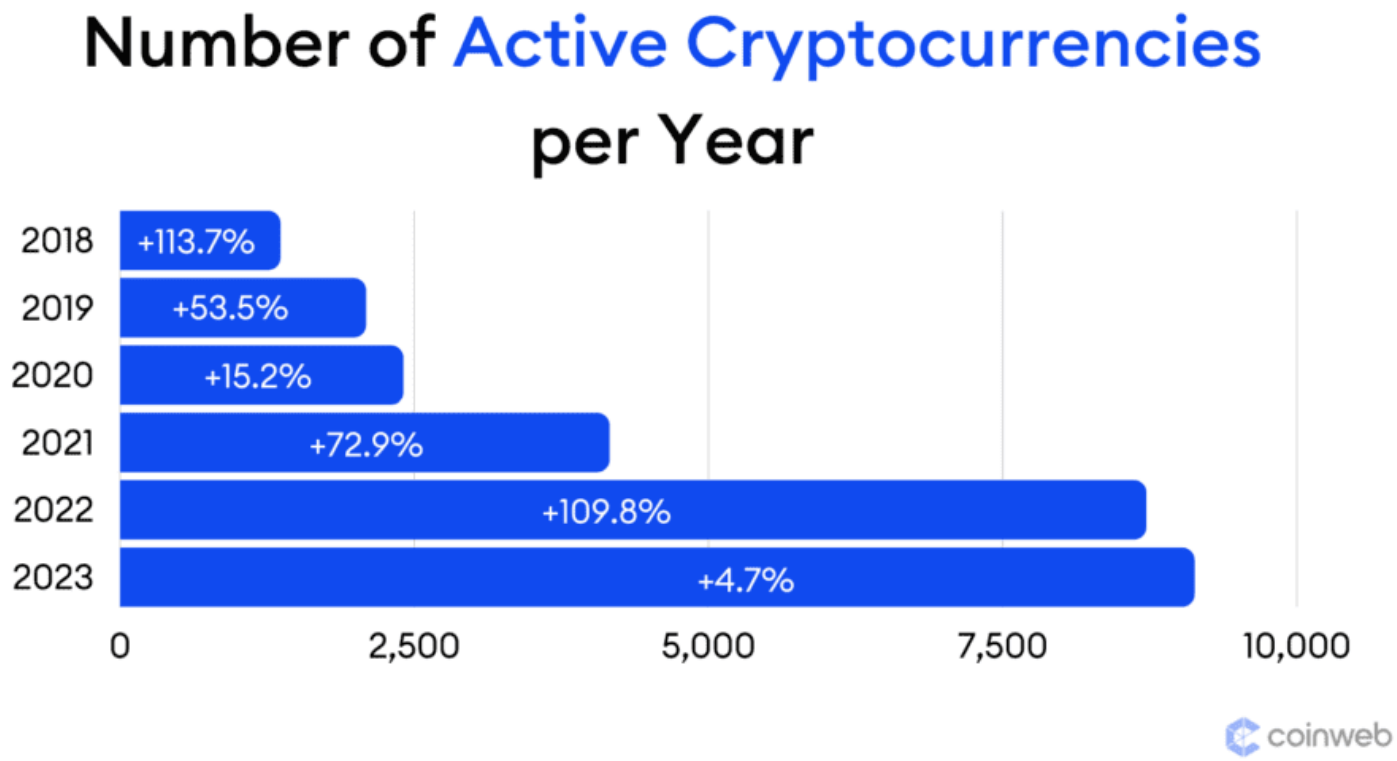
“Active” Cryptocurrencies Approach 10K



Source: Coinweb.com [9]

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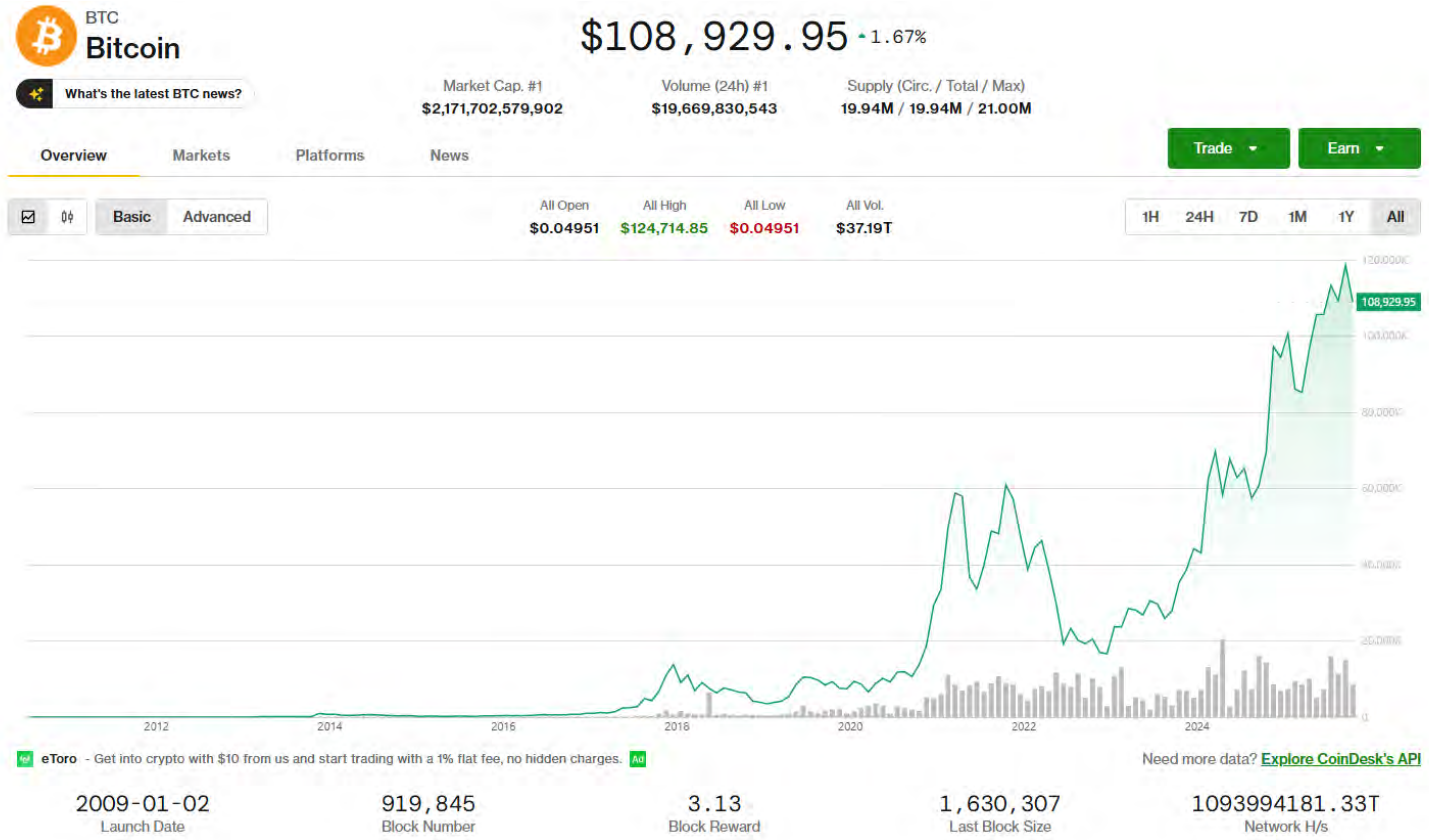
Bitcoin Price Chart



Source: Coindesk.com 10/20/25

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Stablecoins – A Unique Form of Cryptocurrency

- Maintain “stable” value via pegging to an asset
- Common pegging references include $USD, Gold, commodities
- Facilitate international payments without intermediaries
- Fiat–collateralized stablecoins pegged 1:1 to fiat currency held by financial institution
- Tether (USDT) and USD Coin (USDC) are popular examples
- Regulated by GENIUS Act in U.S. as of 7/18/25

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GENIUS Act Highlights

- Digital asset pegged to a fixed monetary value and redeemable at par
- Backed 1:1 by high-quality liquid assets (USD, Gold, etc.)
- Permitted Payment Stablecoin Issuers (PPSIs)
- 1:1 reserve requirement
- Monthly examination by registered CPA firm

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Bitcoin Miner Reward Halving History & Market Price

Date	Halving Amount	New Mining Reward	BTC Price	Block Reward Total
November 2012	25 BTC	25 BTC	$12	$300
July 2016	12.5 BTC	12.5 BTC	$648	$8,100
May 2020	6.25 BTC	6.25 BTC	$8,572	$53,575
April 2024	3.125 BTC	3.125 BTC	$69,000	$215,625

ChartsBTC (@ChartsBtc) / X (twitter.com)

The mining reward is what bitcoin miners receive for being the first to validate a block of transactions. It is their incentive for investing in the mining process.

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BTC ETFs Mark a Milestone in Cryptocurrency

- ETF = Exchange Traded Fund
- Trade like an equity stock
- Can invest in commodities, i.e., Bitcoin
- Eleven BTC applications approved by SEC as of January 2024
- Approximately $148 billion of ETF investments as of October 2025 (BlackRock $86 billion)

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Spot Bitcoin ETF Applications approved by SEC

- Grayscale
- 21Shares / Ark
- Ishares / BlackRock
- Bitwise
- VanEck
- Wisdomtree
- Invesco / Galaxy
- Fidelity
- Valkyrie
- Global X
- Hashdex
- Franklin

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Larry Fink, CEO BlackRock

Then

- Larry Fink 2017

"Cryptocurrency identifies how much money laundering is being done. We are not hearing any demand from any of our clients to use this as an asset class"

Now

- Larry Fink 2023

"We are hearing from clients around the world about the need for crypto. The rally is about a flight to quality. I believe crypto will play that role."

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ARK Invest 2030 Bitcoin Price Targets

Source: ark-invest.com 4/24/25

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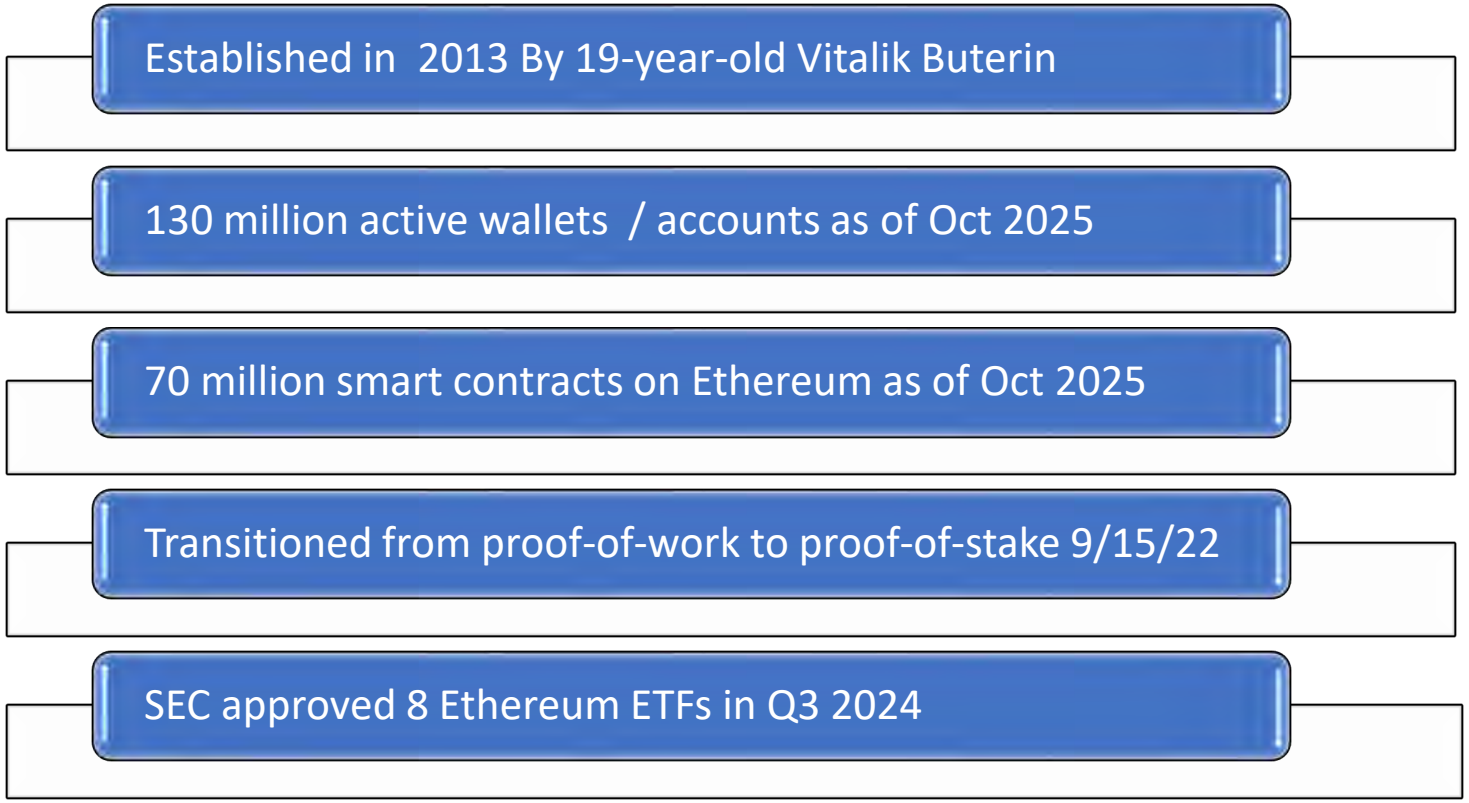
Ethereum Update



Source: Ethereum.org

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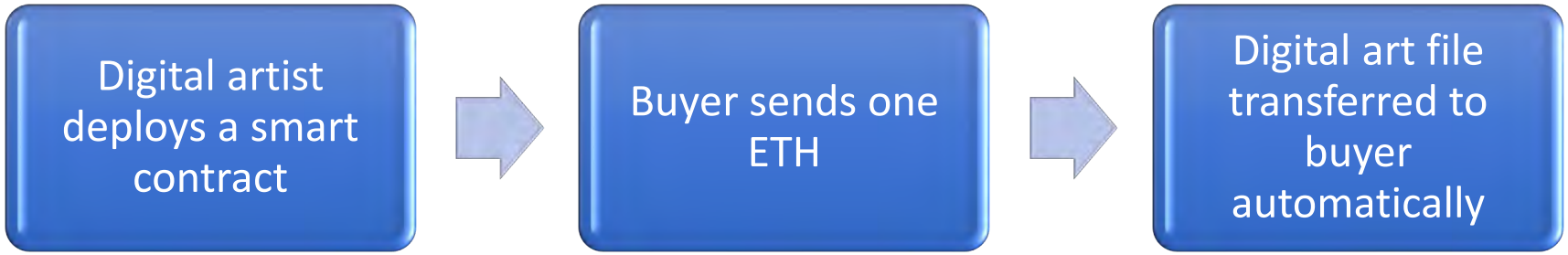
Smart Contracts

- Software coded contract that runs automatically on a blockchain when conditions are met
- Example:



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CRYPTOCURRENCY TECHNOLOGY UPDATE

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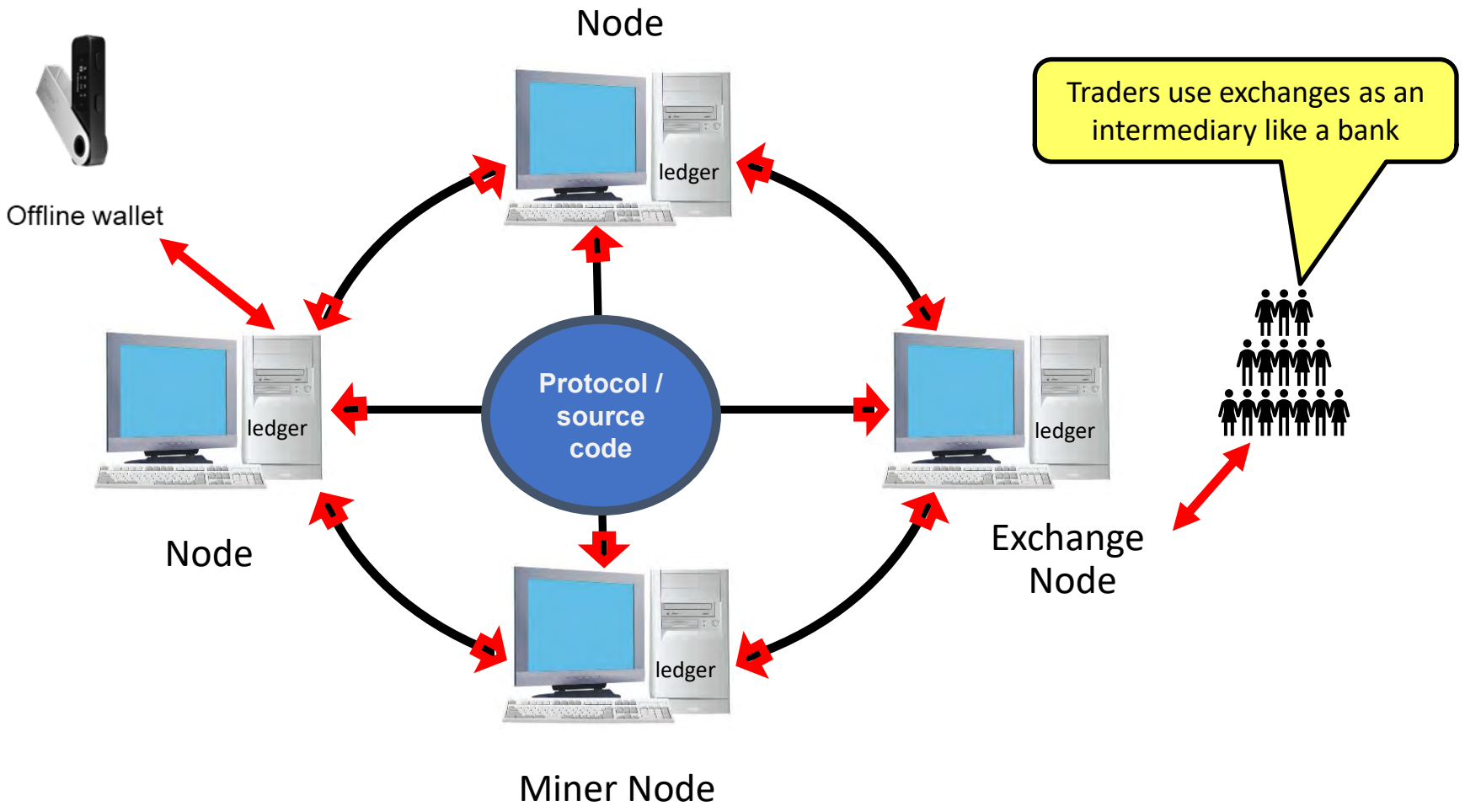
Cryptocurrency Technology Review



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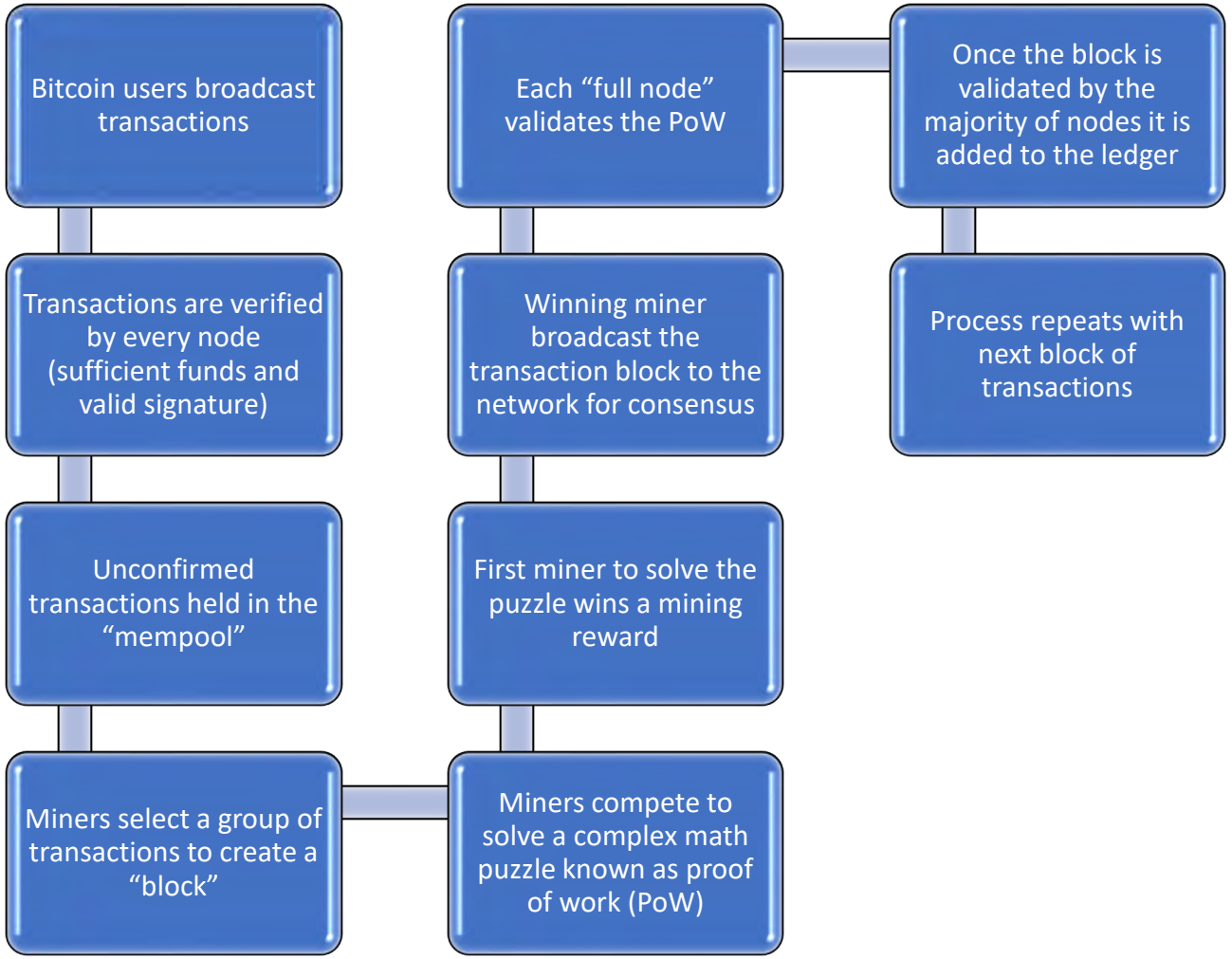
Bitcoin Transaction Validation Process



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Consensus Mechanism

- **Ensure Agreement** - All participants / nodes have a consistent and synchronized copy of the ledger
- **Ensure Integrity** – Prevent fraudulent changes through redundant copies of the ledger
- **Eliminate the Need for Trust** – Enables unknown parties to reach consensus without relying on a central authority

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Consensus Mechanisms

- **Proof of Work** – Requires participants aka miners to validate transactions and create a new block of entries.
- **Proof of Stake – "**Validators**"** are chosen based upon an established form of "stake."
- Ethereum proof of stake model is based on offering holders of Ethereum to "stake" some of there Ethereum holdings

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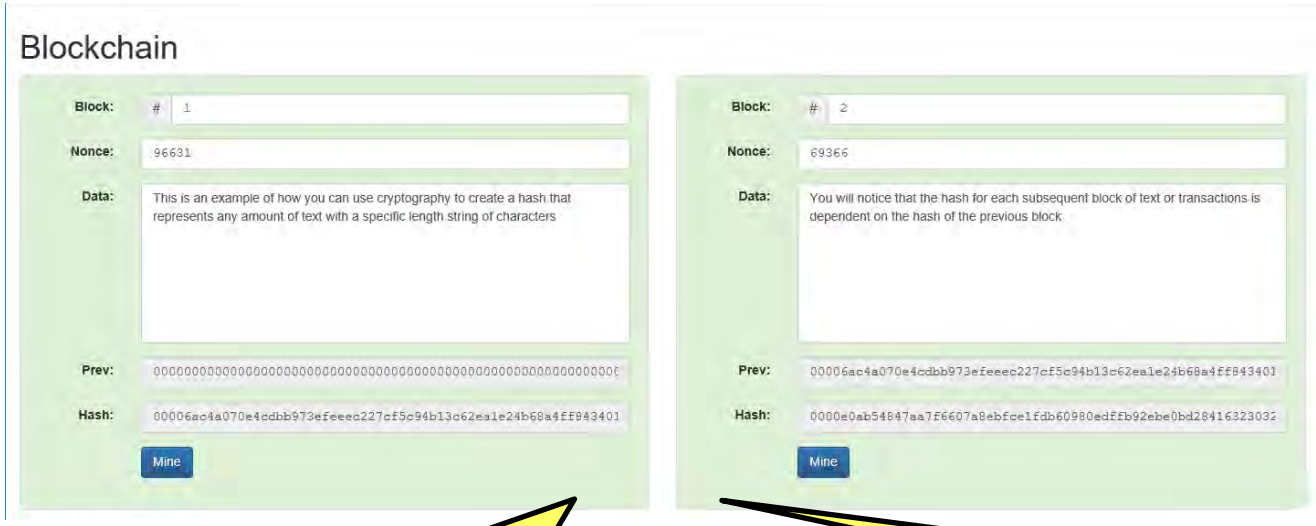
Proof of Work - Cryptographic Hashing & Consensus



This hash is a “fingerprint” of the transaction data. If any of the data is altered, the hash will become invalid.

“Proof of Work” is the process of creating a valid hash value using the consensus protocol algorithm

Click for demonstration video

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New Trends in Cryptocurrency Technology

- Proof-of-stake vs. Proof-of work
- Lightning Network – facilitates “off chain” transactions
- Wallet technology improving
- Introduction of AI cryptocurrency tokens
- Tax compliance software apps

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CRYPTOCURRENCY TAX COMPLIANCE SOFTWARE

LukkaTax™ for Professionals

CoinTracker

LEDGIBLE

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LEGISLATIVE AND REGULATORY UPDATE

IRS
Department of the Treasury
Internal Revenue Service

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FEDERAL TAX IMPLICATIONS OF CRYPTOCURRENCY TRANSACTIONS

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IRS Notice 2014-21

- Issued 3/25/2014
- Provides “virtual currency” taxation guidance
- Defines “convertible” virtual currency (CVC)
- CVC is treated as property (business / investment / personal) for tax purposes
- CVC is not treated as currency
- CVC income reported at fair market value as of date received

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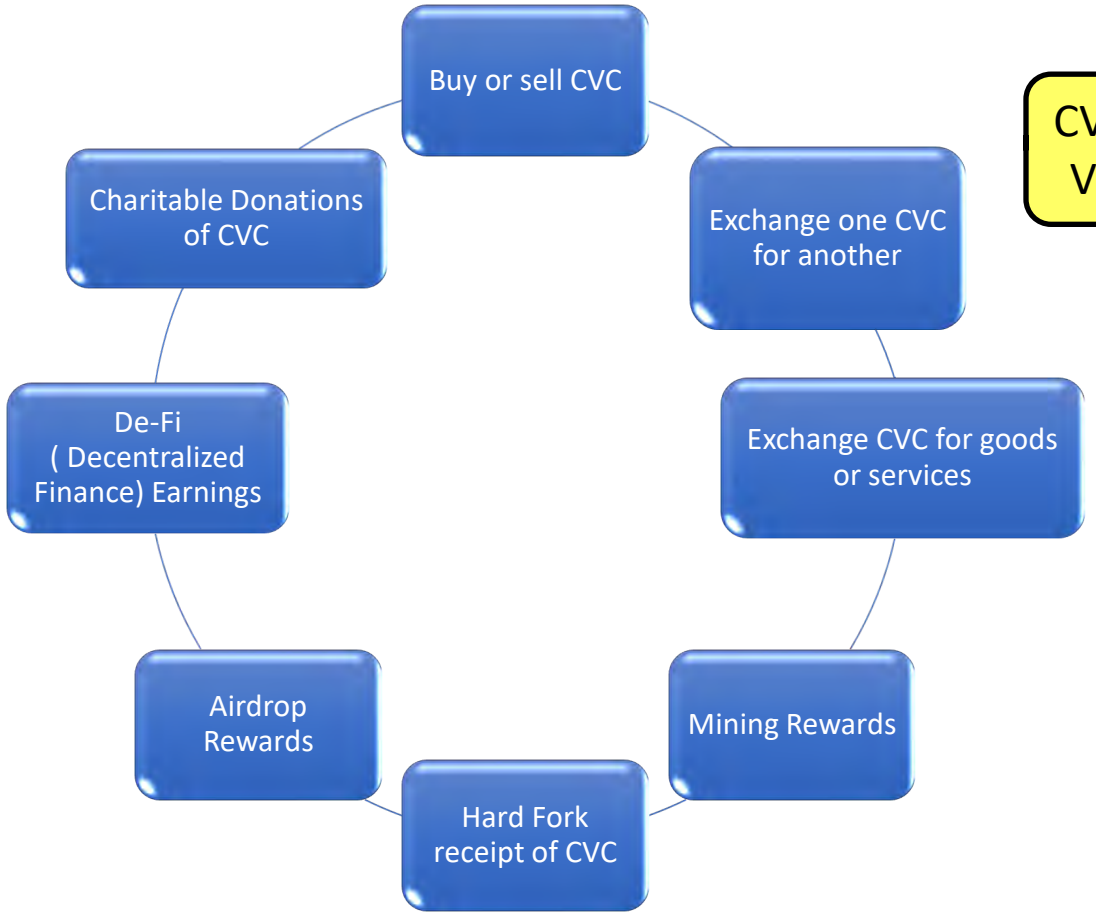
Taxable Virtual Currency Events



CVC = Convertible Virtual Currency

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Legislative Initiatives

- ✓ House Financial Services and Agricultural committees taking the lead
- ✓ Goal is to provide a framework to regulate cryptocurrencies
- ✓ Define which jurisdiction various digital assets fall under
- ✓ Security vs. Commodity
- ✓ Regulate trading platforms and exchanges
- ✓ Senate working on a regulatory framework for stablecoins
- ✓ DOJ clarifies cryptocurrency enforcement role

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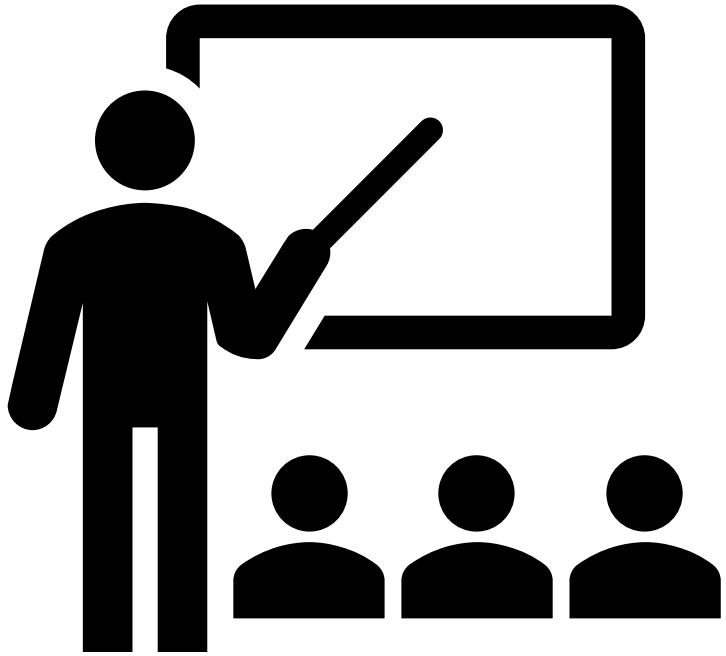
WRAP-UP



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In Summary

- After a 15-year evolution, cryptocurrency has become a mainstream digital asset class
- Bitcoin is the only truly “decentralized” cryptocurrency
- Cryptocurrency valuation continues to be very volatile
- The next few years will likely define the long-term investment potential of cryptocurrency

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