



# UP & RUNNING WITH POWER BI SERVICE

★★★★★ *With Power BI Certified Instructor Aaron Parry*



# COURSE STRUCTURE

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This is a **project-based course** designed for students looking for a practical, hands-on, and engaging approach to learning cloud-based business intelligence with Power BI Service

## Course resources include:

-  **Downloadable PDF eBook** to serve as a helpful reference when you're offline or on the go (*or just need a refresher!*)
-  **Course Assignments** and **Quizzes** to test and reinforce key concepts throughout the course, with detailed step-by-step solutions
-  **Hands-on demos** to keep you engaged, with **downloadable project files** that you can use to follow along from home

# COURSE OUTLINE

1	<b>The Fabric &amp; Power BI Ecosystem</b>	<i>Introduce the Microsoft Fabric and Power BI ecosystems, and review account tiers, user personas, and core elements of the interface</i>
2	<b>Connecting to Data</b>	<i>Connect and import data to Power BI Service, and explore features like gateways, dataflows, and scheduled refresh</i>
3	<b>Reports &amp; Dashboards</b>	<i>Create reports and dashboards, and explore tools like data driven alerts, Q&amp;A, mobile design, and quick insights</i>
4	<b>Sharing &amp; Collaboration</b>	<i>Learn how to share workspaces, collaborate with your team, publish apps to an organization, and more</i>
5	<b>Row-Level Security</b>	<i>Define and test static and dynamic roles with DAX to restrict data access to specific users or groups</i>
6	<b>Power BI Service Administration</b>	<i>Review common Power BI Service administration roles, options, tenant settings and more</i>

# SETTING EXPECTATIONS

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This course is designed as part of a **larger Power BI series**

- *We strongly recommend that you complete our **Power BI Desktop** course before this one, as it provides important context and covers several core topics in depth*



What you see on your screen **may not always match mine**

- *I'll be using a **Fabric Trial capacity** on a **PC/Windows** machine. If you don't have access to that trial or don't have the same admin settings enabled, your experience may differ (some features are unavailable for Mac)*
- *Power BI features are updated frequently, so tools and interface options may change over time*



You'll need a **compatible email address** to access some features

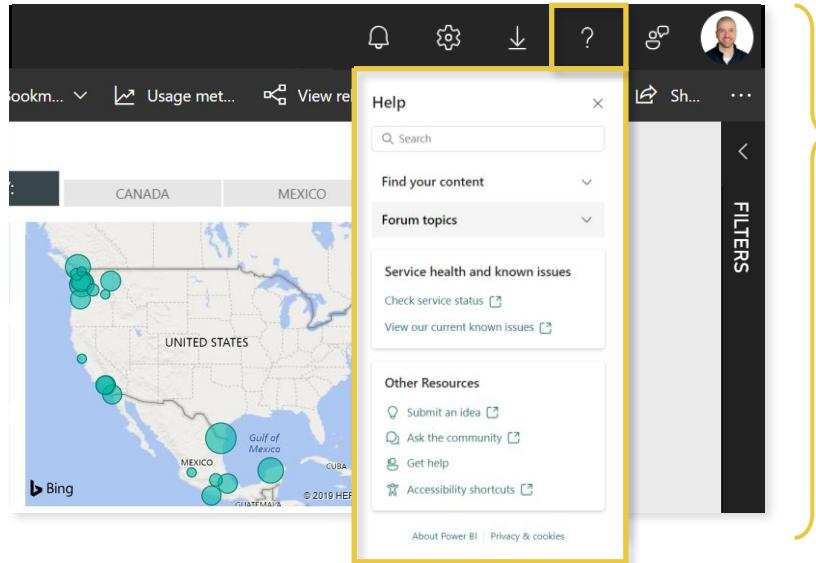
- *Sharing and collaboration features are only accessible with a paid license (**60-day free trial** available)*
- *Compatible emails must be associated with **work** or **school** addresses (personal email domains won't work)*



Our goal is to get you **up and running** with Power BI Service

- *This course is designed to provide a **foundational understanding** of Power BI Service; some concepts may be simplified, and we won't cover every Fabric component*

# HELPFUL RESOURCES

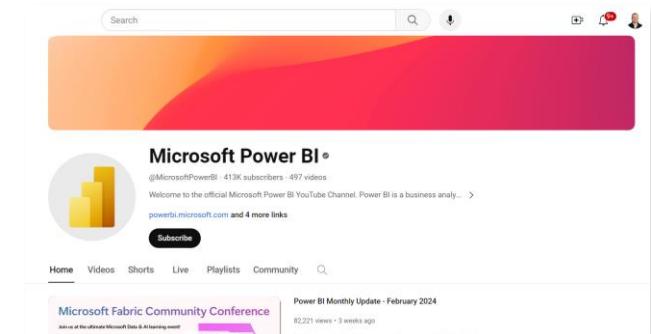


The **Fabric Community** is a place to connect, learn, and discuss business intelligence with your peers and experts ([community.fabric.microsoft.com](https://community.fabric.microsoft.com))

The “**Help & Support**” menu provides access to documentation and training videos from Microsoft support, as well as links to blogs, Power BI communities, and service updates



The **Microsoft Power BI blog** publishes monthly summaries of new features ([powerbi.microsoft.com/blog](https://powerbi.microsoft.com/blog))



The **Power BI YouTube Channel** publishes demos, feature summaries, and advanced tutorials (check out “**Guy in a Cube**” too!)

# INTRODUCING THE COURSE PROJECT

## THE SITUATION

Congratulations! You've just been hired as an analyst for **Maven Inspectional Services\***, a restaurant health inspection agency based in Los Angeles, California

## THE BRIEF

All you've been given is a collection of raw csv files containing health inspection records, along with details about each **restaurant**, **health inspector**, and **violations**

Your goal is to use **Power BI Service** (and Desktop) to build scalable reports & dashboards from the inspection data that can be shared across the company for collaboration

## THE OBJECTIVES

- Load the raw data into Power BI Service
- Build reports and dashboards within a company workspace
- Automate dataflows and schedule updates
- Share and collaborate with your peers and teams



# THE MAVEN INSPECTIONAL SERVICES DATA MODEL

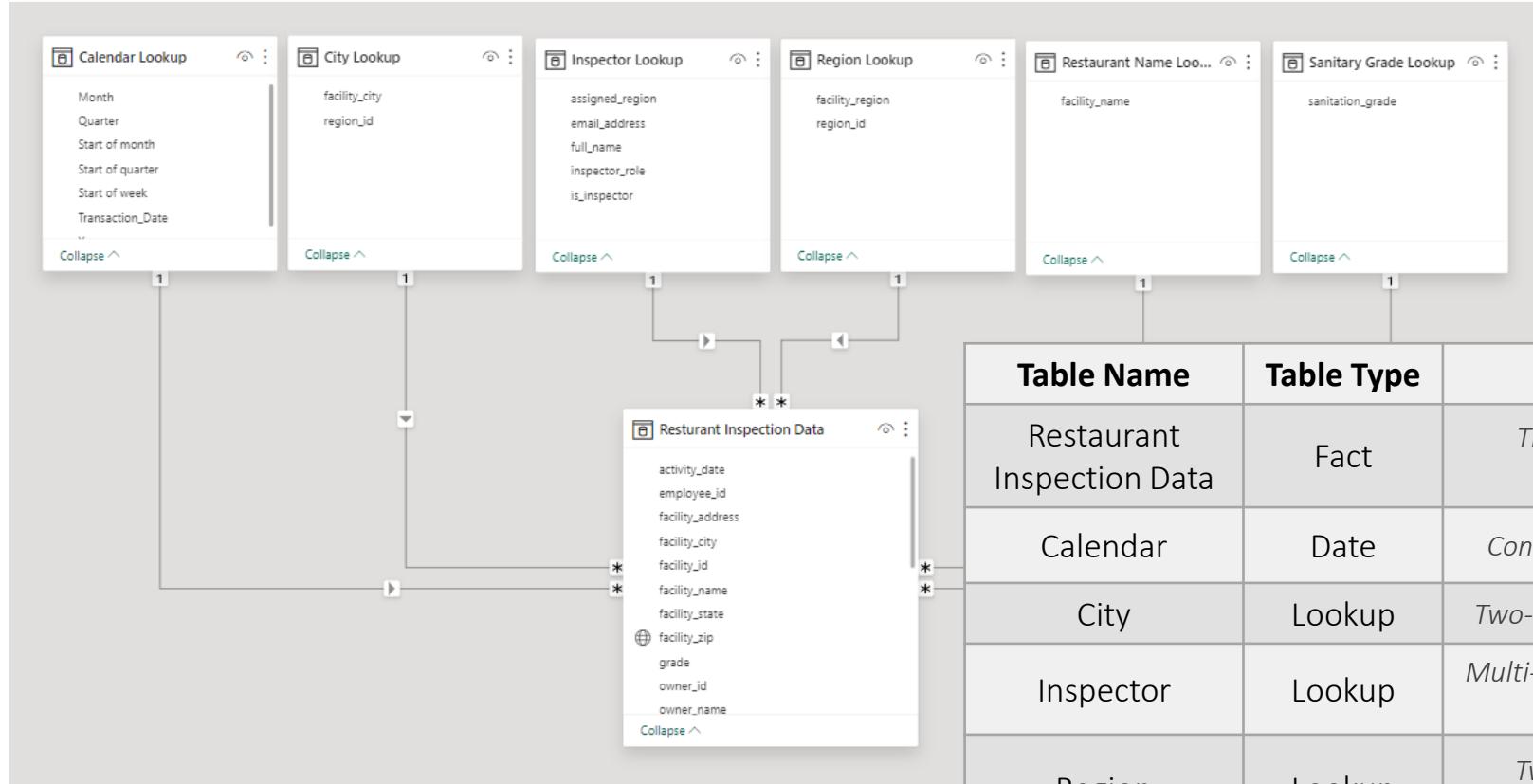


Table Name	Table Type	Definition
Restaurant Inspection Data	Fact	<i>This table contains inspection and violation data including date, facility, geo data, grade, etc.</i>
Calendar	Date	<i>Contains date, month, week, quarter and year details</i>
City	Lookup	<i>Two-column lookup table with facility city and region id</i>
Inspector	Lookup	<i>Multi-column table with inspector name, email, assigned region, role, etc.</i>
Region	Lookup	<i>Two column lookup table with facility region and associated region id</i>
Restaurant Name	Lookup	<i>One column lookup table with unique facility name</i>
Sanitary Grade	Lookup	<i>One column lookup table with A, B, or C values</i>

# FABRIC & POWER BI ECOSYSTEM

# FABRIC & POWER BI ECOSYSTEM



In this section we'll introduce Microsoft Fabric and the role that Power BI plays within the larger ecosystem, and review the basic components and building blocks of Power BI Service

## TOPICS WE'LL COVER

Fabric Ecosystem

Desktop vs. Service

Trial Activation

Workspaces

User Personas

Account Types

Interface Overview

PBI Service Workflow

## GOALS FOR THIS SECTION

- *Understand where Power BI fits within the broader Microsoft Fabric ecosystem*
- *Explore Power BI account tiers and user personas*
- *Create an account and configure your first workspace*
- *Review the Power BI Service workflow, including dataflows, semantic models, reports and dashboards*

# INTRODUCING MICROSOFT FABRIC

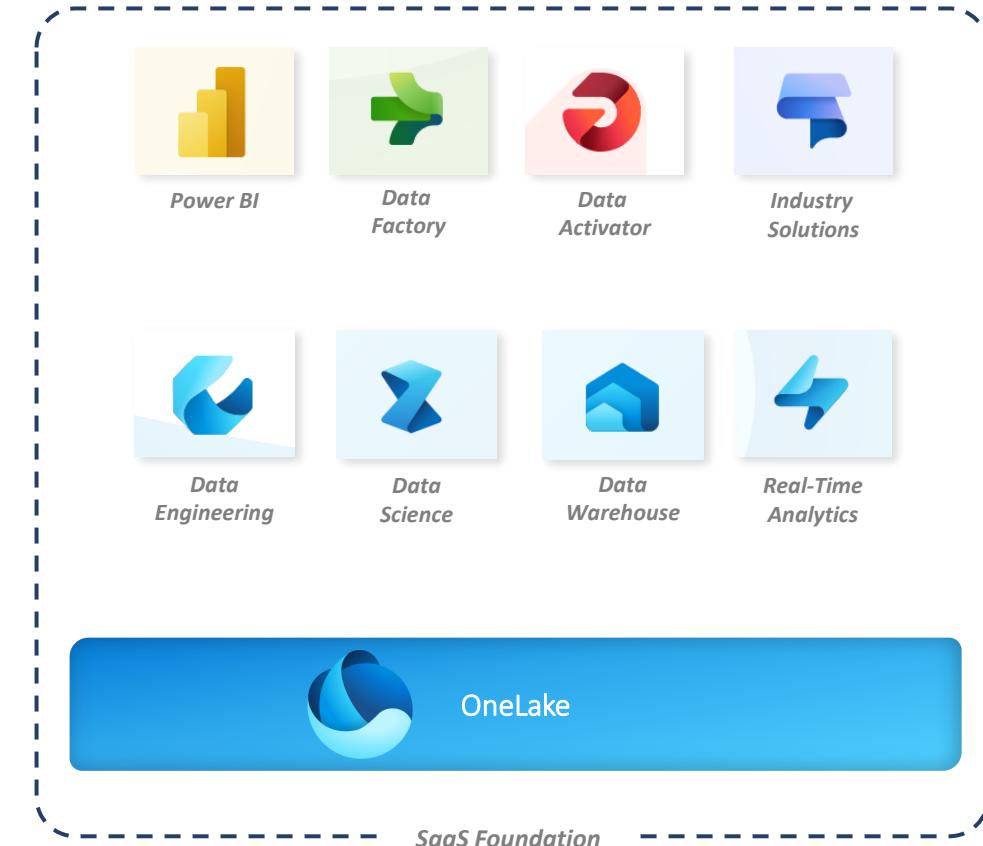


## Microsoft Fabric

**Microsoft Fabric** is an end-to-end data and analytics solution that brings together new and existing components from Power BI, Azure Synapse, and Azure Data Factory into a single integrated environment

### Key advantages of Microsoft Fabric:

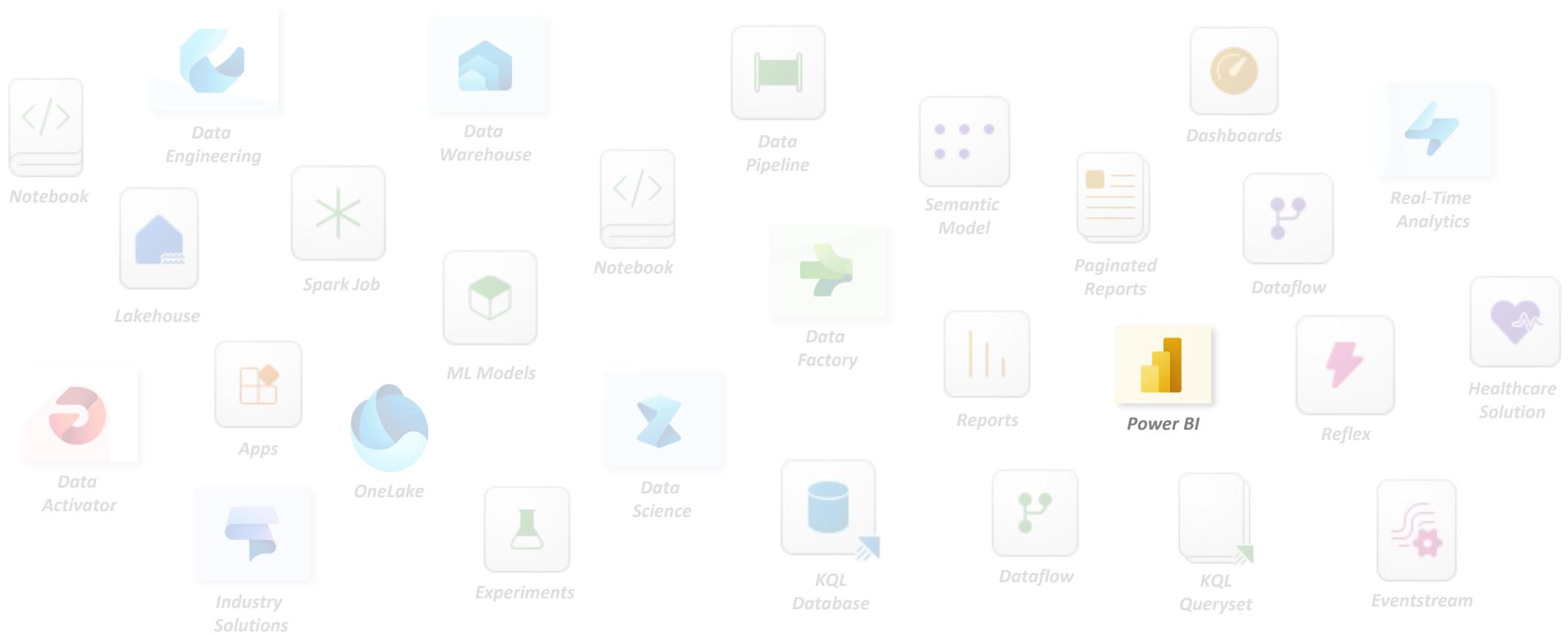
- Industry leading, integrated analytics tools & services
- Unified data storage and access via OneLake
- Consistent, accessible data format and reusable assets
- Shared assets across the entire Fabric ecosystem
- Centralized administration, governance, and monitoring
- Simplified, predictable billing and licensing structure





# FABRIC ECOSYSTEM

**Microsoft Fabric** is a huge ecosystem; focus on building expertise in a few keys areas that align with your role, rather than trying to master everything





# FABRIC COMPONENTS

**Fabric components** offer a comprehensive set of analytics experiences that are tailored to specific tasks and use cases, and designed to work together seamlessly



Power BI

Power BI is a set of tools designed to help users visualize, analyze, and share data in a centralized online environment



Data Engineering

Use Lakehouses, Notebooks, and Spark Jobs to design, build and maintain infrastructures & systems that enable organizations to collect, store, process, and analyze large volumes of data



Data Factory

Create ETL processes with Dataflows and Data pipelines that allows users to create, schedule, and coordinate data transformations



Data Science

Use Notebooks, Experiments, and ML models to explore your data, prep and clean data for experimentation, build ML models, and create predictive insights for your BI reports



Data Activator

Data Activator lets business users define rules and conditions that trigger data-driven alerts and automated actions



Data Warehouse

Data Warehouse combines big data and warehousing solutions, providing a unified platform to create schemas, tables, stored procedures, and other database objects



Industry Solutions

Industry Solutions address unique challenges faced by different industries and provide a space for industry-relevant connectors, transformations, scenario-specific tools, and decision making



Real-Time Analytics

Rapidly ingest, transform, and query any data source and format, from 1 GB – 1 PB, and then visualize and share the insight



# FABRIC COMPONENTS

 Data Ingestion & ETL

 Data Storage

 Data Science & Engineering

 Business Intelligence



Data Factory



Real-Time Analytics



Data Warehouse



Data Engineering



Data Science



Power BI



Industry Solutions



Data Activator



## OneLake



# FABRIC USER PERSONAS

 Data Ingestion & ETL

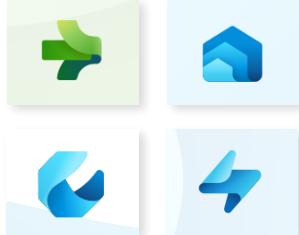
 Data Storage

 Data Science & Engineering

 Business Intelligence



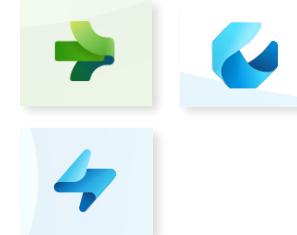
Data Engineers



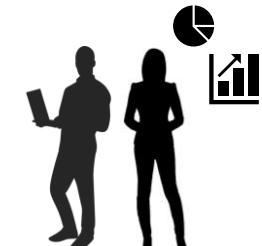
Database Admins



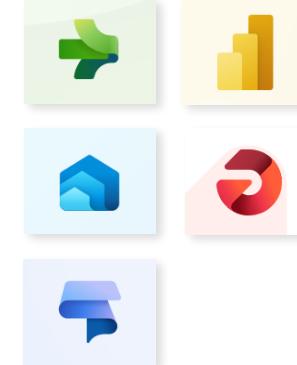
Analytics Engineers



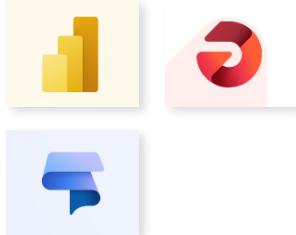
Data Scientists



BI & Data Analysts



Business Users





# MEET POWER BI SERVICE

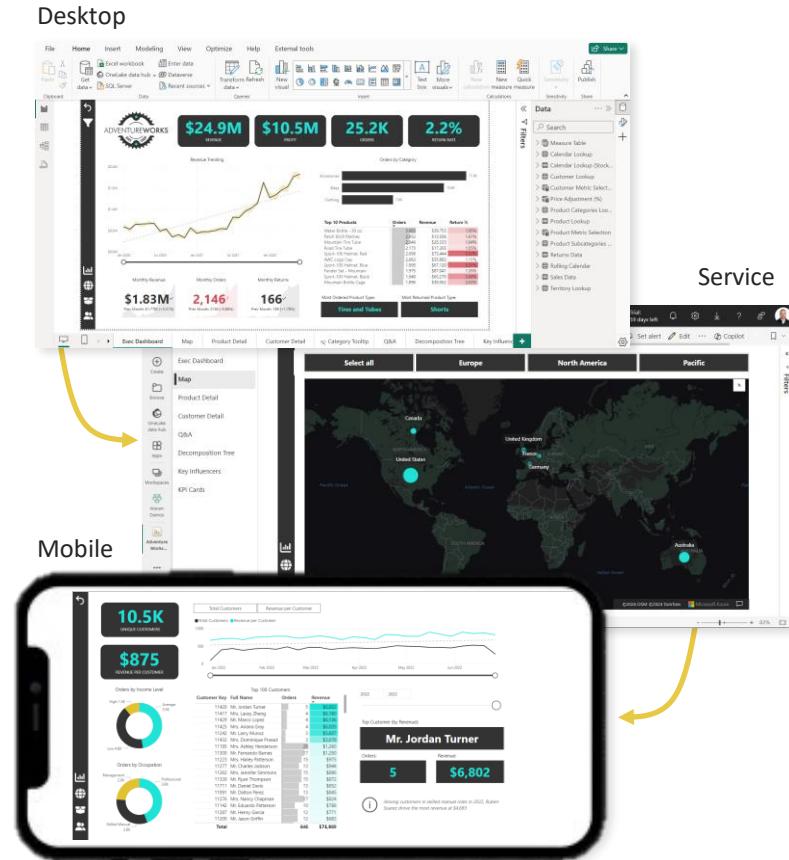


**Power BI Service** is a cloud-based business intelligence service designed to help users visualize, analyze, and share data in a centralized online environment

## With Power BI Service, users can:

- Create interactive reports and dashboards
- Connect to online and on-premises data sources
- Collaborate through shared workspaces
- Provide a scalable, organization wide BI solution
- Integrate seamlessly with other Microsoft services & products

More info at [powerbi.microsoft.com](https://powerbi.microsoft.com)





# POWER BI DESKTOP VS. SERVICE

**Power BI Desktop** and **Power BI Service** have become more similar over time, and now share many of the same tools, features, and functionality for connecting, creating, building and sharing with data



**Power BI Desktop**

## CONNECT

- 190+ Data Sources
- Power Query
- M code

## CREATE

- Data models
- Relationships
- DAX calculations
- Row-level security

## BUILD

- Reports & dashboards
- Visualization tools
- Mobile layout

## SHARE

- Publish to Service
- Share file directly



**Power BI Service**

- 160+ Data Sources
- Dataflows (PQ)
- M code
- Gateways

- Data models
- Relationships
- DAX calculations
- Row-level security

- Reports & dashboards
- Visualization tools
- Mobile layout

- Workspaces
- Apps
- Publish to Web
- Export options



# INDIVIDUAL LICENSE OPTIONS

There are different types of **individual licenses** available in Power BI Service, including **Free**, **Pro** and **PPU**

## Power BI FREE

*No license required but users have limited access and can't collaborate or distribute content*

### **Capabilities:**

- No license Required
- Connect to 190+ Data Sources (*desktop & service*)
- Publish to Web
- Export to PowerPoint, Excel, CSV
- Share to Pro or Premium users

## Power BI PRO

*Individually licensed and can leverage all content creation and interaction features*

### **Capabilities:**

- All from Free tier +*
- User-based License
  - Workspaces
  - Email Subscriptions
  - Peer-to-Peer Sharing
  - Publish Apps
  - Analyze in Excel & PBI Desktop
  - Paginated Reports

## Power BI PREMIUM PER USER

*Individually licensed, can leverage all content creation, interaction, and most premium features*

### **Capabilities:**

- All from Pro tier +*
- AI Capabilities
  - Advanced Dataflows
  - Deployment Pipeline
  - Datamarts
  - XMLA Endpoint Connectivity
  - Enhanced Automatic Page Refresh
  - Increased Storage Limits



# CAPACITY TIERS

There are different types of Power BI and Fabric **capacity tiers/subscriptions** available for organizations

## Power BI PREMIUM

*Licensing for your organization to access Fabric in a unified product; content can be viewed without additional per-user cost*

## Fabric RESERVATION

*Licensing for your organization to access Fabric in a unified product, plus Azure Consumption Commitment (MACC) eligible*

## Fabric PAY-AS-YOU-GO

*Licensing based on dedicated capacity vs. number of users, plus MACC eligible and pay-as-you-go (scale up, down, & pause)*

### ***Shared Capabilities:***

- Capacity-based licenses (P/F SKUs)
- Consume company reports without need for individual user licenses
- Pro/PPU license required to create, publish, share, and collaborate in Power BI workspace
- Greater scale & performance as business needs evolve
- Works with on premises Power BI Report Server
- Unified access to Microsoft Fabric workloads



# FEATURE COMPARISON

	FREE	PRO	PPU	PREMIUM
Create reports with Power BI Desktop	●	●	●	●
Publish Power BI reports, share & collaborate		●	●	
Advance AI, dataflows, datamarts, XMLA endpoint			●	●
Users can consume content without a PPU license				●
Access to all Microsoft Fabric workloads				●
Model memory size limit		1 GB	100 GB	400 GB
Refresh rate of Power BI Semantic Models		8 per day	48 per day	48 per day
Maximum storage (Power BI native storage)		10GB / user	100 TB	100 TB
Data security and encryption	●	●	●	●
OneLake storage, BCDR storage & cache				●



# POWER BI USER PERSONAS

Power BI Service and the broader Power BI ecosystem are designed to serve various **user personas**



## THE **CREATOR** – Creators **design, build, and maintain reports & dashboards**

These users play a key role in the entire BI workflow, from data wrangling to modeling and visualization, and must have a deep, well-rounded Power BI skillset



## THE **ANALYZER** – Analyzers **explore and manipulate data to extract key insights**

These users often create and edit visuals, define calculated measures and columns with DAX, and use features like Q&A, interactions, report filters and bookmarks



## THE **COLLABORATOR** – Collaborators **publish and share reports, apps and workspaces** to ensure that everyone has access to the data they need

These users should be familiar with configuring user roles, row-level security (RLS), and app/workspace environments



# CREATING A NEW POWER BI ACCOUNT

**1** Go to [powerbi.microsoft.com/landing/free-account](https://powerbi.microsoft.com/landing/free-account) and click TRY FOR FREE

- Head to **Step 3** if you already have an account

**Microsoft Power BI**

Create rich, interactive data visualizations and share important business insights to help you drive success.

Try Power BI as part of a free Microsoft Fabric account.

Try for free

**2** Follow the **account set up process** using a work or school email address

You've selected Microsoft Fabric free

1 Let's get you started

2 Create your account

First name \*  Last name \*   
Country or Region \*   
Business phone number \*   
Email   
Enter a password to sign in to your account.  
Create password \*  Confirm password \*   
We've sent a verification code to aaron@mavenbi.com. Enter the code to complete sign up.  
Verification code \*  Resend code  
I understand that Microsoft may contact me about my trial.  
I will receive information, tips, and offers about Power BI solutions for businesses and organizations, and other Microsoft products and services. [Privacy Statement](#)  
 I would like Microsoft to share my information with select partners so I can receive relevant information about their products and services. To learn more or to unsubscribe at any time, view the [Privacy Statement](#).  
By choosing Next, you agree to our [terms and conditions](#) and [Privacy Statement](#).

Next Back

3 Confirmation details

**3** Once you've created your account, navigate directly to [app.powerbi.com](https://app.powerbi.com) to log in

Power BI

Enter your email, we'll check if you need to create a new account.

Email

By proceeding you acknowledge that if you use your organization's email, your organization may have rights to access and manage your data and account. [Learn more about using your organization's email](#)

By clicking Submit, you agree to these [terms and conditions](#) and allow Power BI to get your user and tenant details. [Microsoft Privacy Statement](#)

Submit



## HEY THIS IS IMPORTANT!

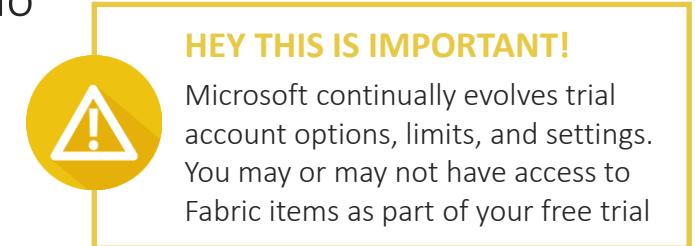
Power BI requires a **work or school email address**. Domains like @gmail, @yahoo, @outlook, etc. will not be accepted



# PRO TIP: SIGNING UP THROUGH MAVEN ANALYTICS

**Maven Analytics** offers free Power BI Service accounts to individuals who do not have a school or work email address

1. **Create** a free Maven Analytics account or Log In at <https://www.mavenanalytics.io>
2. **Activate** your Power BI Service trial from the **External Apps** menu and follow the steps
3. **Sign-in** to [app.powerbi.com](https://app.powerbi.com) with your new @mavenbi.org email account



**Create** free Maven account or log-in

**Activate** Power BI Service free trial

**Sign-in** to Power BI Service



# ACTIVATING A FABRIC TRIAL

Log into your Power BI Service account and click **Start Trial**

The screenshot shows the Microsoft Power BI Service login interface. At the top right is a user profile icon. Below it, the user information is displayed: Aaron Parry and the email address 84659736@mavenbi.org. Underneath, it says "License type: Free account". A prominent yellow box highlights the "Start trial" button. A yellow arrow points from this button to a modal dialog at the bottom left. The modal has a title "Upgrade to a free Microsoft Fabric trial". It contains text about upgrading to a trial and accepting terms and conditions, with "Start trial" and "Cancel" buttons.

Your **trial period** lasts **60 days**, and you'll see your remaining time in the header bar each time you log in:

The screenshot shows the Microsoft Power BI Home page. In the top right corner, there is a "Trial: 59 days left" message, which is highlighted with a yellow box. The main area displays recommended content: "Explore basic Power BI concepts", "Explore the 100 most useful productivity tips", and "Cancer statistics in the USA". Each item has an "Open" button. The sidebar on the left includes links for Home, Create, Browse, OneLake data hub, Apps, Metrics, Workspaces, and My workspace.

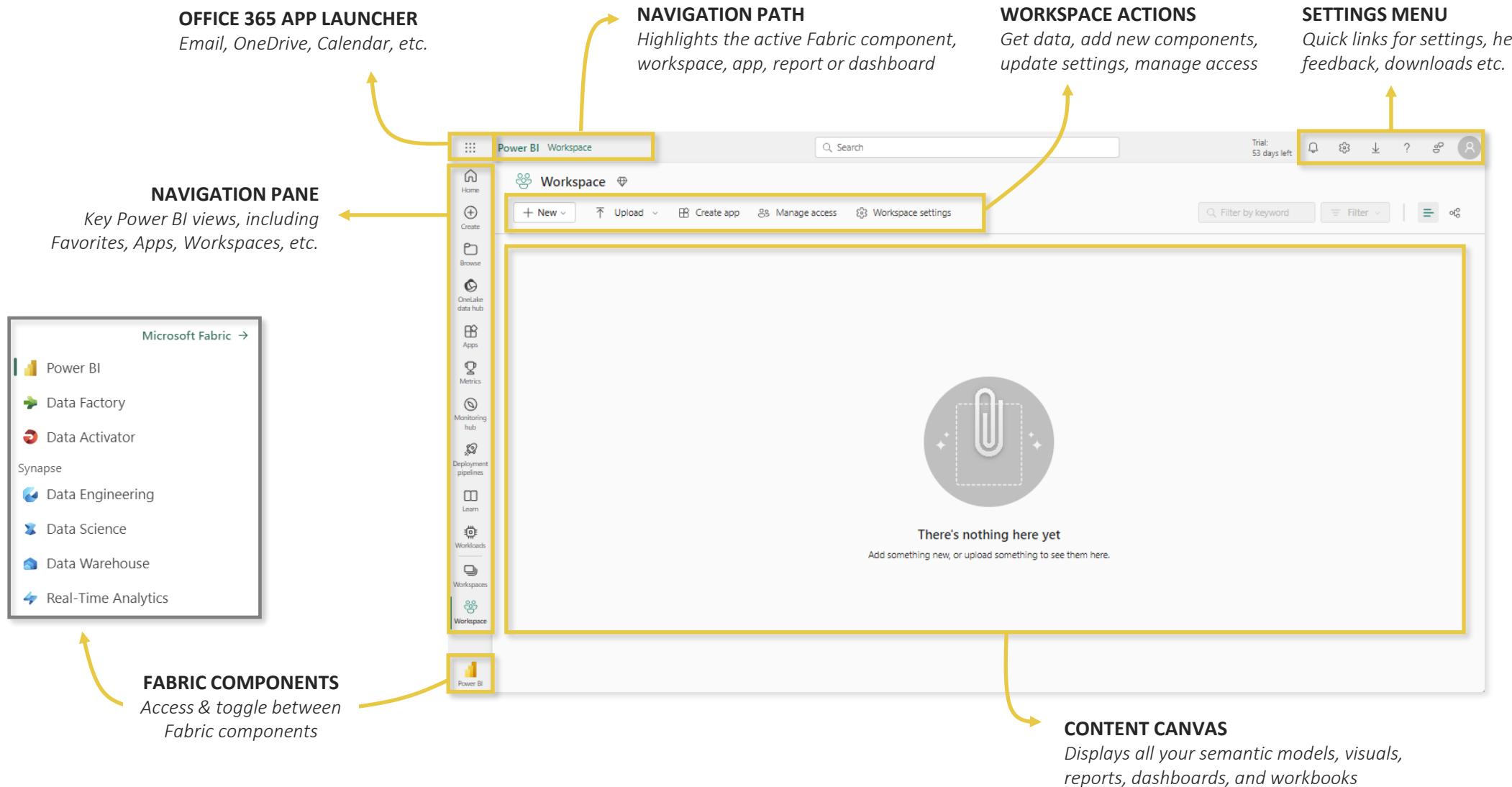


## HEY THIS IS IMPORTANT!

We're activating a **Fabric trial**, which includes tools & features that we won't cover in this course



# POWER BI SERVICE INTERFACE





# WORKSPACES

**Workspaces** are containers for dataflows, semantic models, paginated reports, reports and dashboards, where you can collaborate and share content with colleagues



## MY WORKSPACE

- **Personal workspace** for a single user  
(*free or paid license*)
- **Only you** can access, can't collaborate with others
- Content can be shared with **individual Pro/PPU users**  
(*shared with me*)
- Contains core **building blocks** (*semantic models, reports and dashboards*)



## WORKSPACE

- **Shared workspace** for many users  
(*with paid licenses or Premium capacity*)
- **Multiple users** can access & collaborate on content
- Content can be created & shared **across your organization**
- Contains core **building blocks** (*semantic models, reports and dashboards*) plus **dataflows**



# CREATING A WORKSPACE

Add a **Name** (required) and optional **description**, **domain**, and **image** for your workspace

**Create a workspace**

**Name \***  
My Example Workspace  
 This name is available

**Description**  
This is an example workspace for LA restaurant inspectors

**Domain** ⓘ  
Assign to a domain (optional)

Learn more about workspace settings [↗](#)

**Workspace image**  
 [Upload](#) [Reset](#)

**Advanced** [▼](#)

**Apply** **Cancel**

**Advanced options** include license mode (pro, trial, PPU, Premium, Embedded, & Fabric capacity) and model storage format (small or large)

**Workspaces**

My workspace

All

My Example Workspace



# WORKSPACE SETTINGS

**Workspace settings** include options to change license types, update storage modes, configure integrations, adjust workspace member permissions, and more

**Premium settings allow for workspace license mode changes and semantic model storage format updates**

**Data Model Settings**  
Allow workspace members to edit data models in the service. Edits are permanent and automatically saved in this feature preview, and version history isn't saved. This setting doesn't apply to Direct Lake semantic models or editing a semantic model through an API or XMLA endpoint. [Learn more](#)

Users can edit data models in the Power BI service (preview)

**Choose a license**

**License mode**

- Pro**  
Select Pro to use basic Power BI features and collaborate on reports, dashboards, and scorecards. To access a Pro workspace, users need Pro per-user licenses. [Learn more](#)
- Premium per-user**  
Select Premium per-user to collaborate using Power BI Premium features, including paginated reports, dataflows, and datamarts. To collaborate and share content in a Premium per-user workspace, users need Premium per-user licenses. [Learn more](#)
- Premium capacity**  
Select premium capacity if the workspace will be hosted in a premium capacity. When you share, collaborate on, and distribute Power BI and Microsoft Fabric content, users in the viewer role can access this content without needing a Pro or Premium per-user license. [Learn more](#)
- Trial**  
Select the free trial per-user license to try all the new features and experiences in Microsoft Fabric for 60 days. A Microsoft Fabric trial license allows users to create Microsoft Fabric items

**Data Model Setting** allow workspace members to edit semantic models directly in Power BI Service (this includes defining **model relationships, DAX, Roles**, etc.)



# WORKSPACE ACTIONS

## CONTENT



Reports



Dashboards



Paginated Report

## SEMANTIC MODELS & DATAFLOWS



Semantic models



Dataflows

**Reports:** Collection of visuals displaying data and insight built on a semantic model

**Dashboards:** Single page display that aggregates visuals from disparate sources

**Paginated Report:** Report designed for printing or PDF generation



Share

Content with colleagues



Favorite

Add selected content to Favorites



More Options

Contextual settings & options



Refresh Now

Refresh underlying source data



Scheduled Refresh

Set automated refresh schedule



More Options

Contextual settings & options



# POWER BI SERVICE WORKFLOW

## WORKSPACE



Dataflows



Semantic Model →



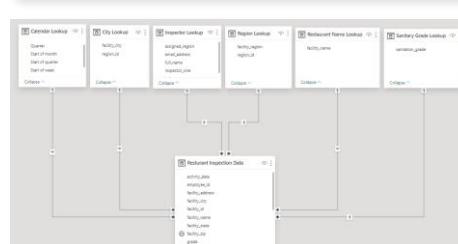
Reports →



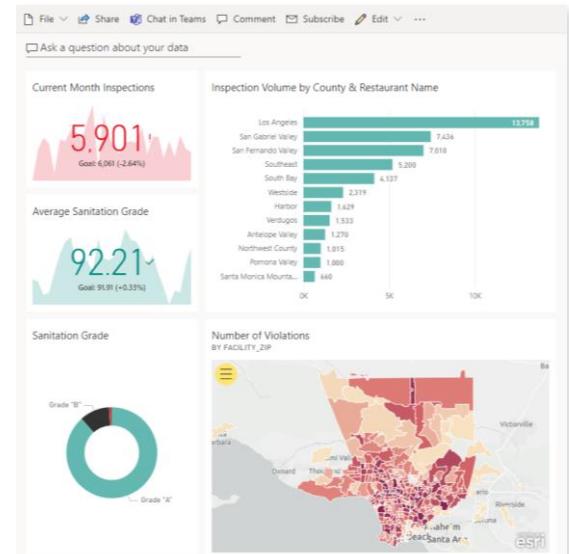
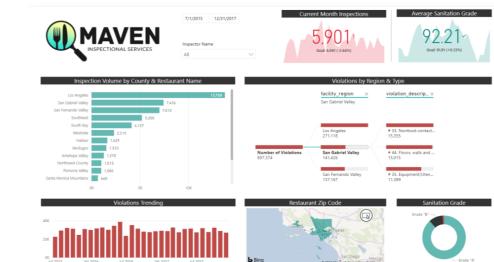
Dashboards

The screenshot shows the Power Query interface. At the top, there are tabs for Home, Transform, Add column, View, and Help. Below the tabs are buttons for Get data, Manage connections, Options, and Manage parameters. A 'Get data' dialog is open, titled 'New source'. It contains a search bar and a list of sources: All, File, Database, Microsoft Fabric, Excel workbook, Text/CSV, XML, JSON, Folder, PDF, Parquet, SharePoint folder, SQL Server database, and Access. The 'File' tab is selected.

The screenshot shows the Power BI Data Model interface. It displays a data flow diagram with various tables and relationships. The tables include 'Calendar Lookup', 'City Lookup', 'Inspector Lookup', 'Region Lookup', 'Restaurant Name Lookup', 'Sanitary Grade Lookup', 'Restaurant Inspection Data', and 'Sanitary Grade'. Relationships are shown between 'Calendar Lookup' and 'Restaurant Inspection Data', and between 'Region Lookup' and 'Restaurant Inspection Data'. The 'Transform' ribbon tab is selected at the top.



```
1 Prev Month Avg Sanitary Grade =  
2 CALCULATE(  
3     [Avg Sanitary Grade],  
4     DATEADD(  
5         'Calendar Lookup'[Transaction_Date],  
6         -1,  
7         MONTH  
8     )  
9 )
```



# CONNECTING TO DATA

# CONNECTING TO DATA



In this section we'll cover different ways to **connect to data** in Power BI Service, and explore tools like gateways, dataflows, and scheduled refresh

## TOPICS WE'LL COVER

Connection Options

Importing Local Files

Data Gateways

Dataflows

Scheduled Refresh

Automation

## GOALS FOR THIS SECTION

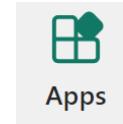
- Add new content by connecting to flat files or publishing Power BI Desktop reports
- Connect data between a local computer or on-premises source to Power BI Service
- Build independent queries that can run within Power Query in the cloud
- Learn how to keep Power BI reports updated with scheduled refresh



# DATA CONNECTION OPTIONS

To bring data into Power BI Service, you can either **discover existing content** from OneLake or Apps, or **create new content** by importing/uploading files, connecting to database sources, or building dataflows

## DISCOVER CONTENT



Apps

### OneLake

- A data hub that's integrated into every Fabric tenant and built on Azure Data Lake Storage Gen 2
- OneLake can support any type of file, structured or unstructured, and automatically stores all Fabric data, like data lakehouses, warehouses, & datamarts, in Delta-Parquet format

### Apps

- Collections of reports and dashboards, created by other people in your organization that you can discover and connect to

## CREATE CONTENT



CSV / XLSX



Database



PBIX

### New

- Use Semantic model to import data files like CSV and Excel files, or manually enter or paste data
- Connect Azure databases to Power BI to get analytics and report on real-time insights

### Upload

- Upload files like PBIX, CSV, and XLSX files from OneDrive, SharePoint, or your local file system (*OneDrive & SharePoint require org. account*)
- Build dataflows in Service and use Desktop to create a semantic model



# LOADING A LOCAL FILE

**HEY THIS IS IMPORTANT!**  
Data imported from Excel must be **formatted as a table**

**Add data to start building a report**

Excel CSV Paste or manually enter data

Don't see the source you're looking for? [Download the desktop app.](#)

**Restaurant Inspections**

Name	Type
Restaurant Inspection Data	Semantic model

**Semantic model view**

Details for Restaurant Inspection Data  
+ Add description  
Location: Restaurant Inspections Refreshed: 4/18/24, 1:04:56 PM

Discover business insights  
Explore this data to get insights fast or create an interactive report you can share. [Learn more](#)

Share this data  
Give people access to the semantic model and set their permissions to work with it. [Learn more](#)

Share semantic model

Select a table and/or columns from this semantic model to view and export the underlying data. [Learn more](#)

To select more than one table, and view summarized data, create a paginated report.

Create paginated report

Restaurant Inspection Data



# SEMANTIC MODEL VIEW

**MENU OPTIONS**  
Manage permissions & settings, refresh, share, explore, export and more

**SHARE DATA**  
Grant access and share the semantic model

**MODEL DETAILS**  
Specific details about the semantic model, including the title, description and refresh date

**EXPLORE DATA**  
Build visuals to explore your model, auto-create new reports, or create blank reports

**RELATED ITEMS**  
Items that use the same data source will populate here like reports, dataflows & dashboards

**TABLE VIEW**  
Select tables & columns to explore, view, and export data

The screenshot illustrates the Semantic Model View interface with several sections highlighted by yellow boxes and arrows:

- MODEL DETAILS**: A box containing "Details for Restaurant Inspection Data" (Restaurant Inspections), an "Add description" button, and a "Refreshed" timestamp (4/18/24, 1:04:56 PM).
- EXPLORE DATA**: A box containing "Discover business insights" (Explore this data) and "Share this data" (Share semantic model).
- RELATED ITEMS**: A box showing a table of related items with columns: Name, Type, Relation, Location, Refreshed, Endorsement, and Sensitivity. One item listed is "Restaurant Inspection ... Dashboard".
- MENU OPTIONS**: A box at the top with options: File, Refresh, Share, Explore this data, Export, Lineage, Open data model, and three dots.
- SHARE DATA**: A box to the right of the Explore Data section, titled "Tables". It allows selecting tables and columns from the semantic model to view and export underlying data. It includes a "Create paginated report" button and a list of tables: Restaurant Inspection Data, activity\_date, employee\_id, facility\_address, region\_id, facility\_city, facility\_id, facility\_name, and facility\_state.
- TABLE VIEW**: A box to the right of the Share Data section, titled "Tables". It lists the same tables as the Share Data box, with checkboxes next to each table name.



# ASSIGNMENT: LOADING A CSV FILE



**NEW MESSAGE**

From: **David Schmitt (Lead Inspector)**

Subject: **Welcome to the team!**

Hey there – welcome aboard!

I hope you're having a great first week and starting to settle in.

I have a small project for you. We're trying to centralize our reporting on the cloud – could you please create a company workspace in Power BI Service, upload the attached inspections data, and do some quick data profiling?

Thanks!  
-Dave

 Restaurant Inspection Data.csv

## Key Objectives

1. Create a new workspace, add a name and brief description, and set the license mode
2. Load the **Restaurant Inspection Data.csv** file into the workspace
3. Answer the following questions:
  - What are the 3 types of *grades*?
  - What does the *violation\_status* field contain?
  - How many facilities are included in the dataset?



# SOLUTION: LOADING A CSV FILE

  NEW MESSAGE

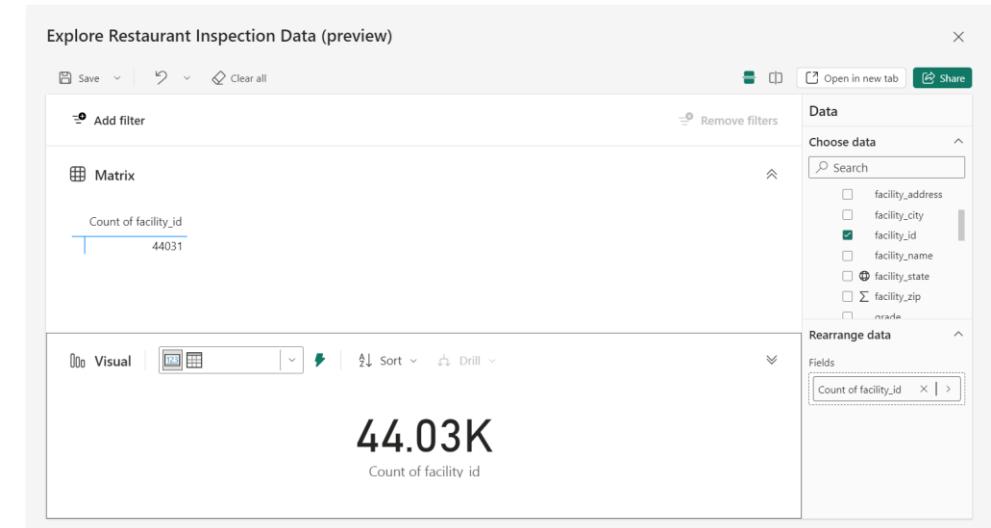
From: **David Schmitt (Lead Inspector)**  
Subject: **Welcome to the team!**

Hey there – welcome aboard!  
I hope you're having a great first week and starting to settle in.  
I have a small project for you. We're trying to centralize our reporting on the cloud – could you please create a company workspace in Power BI Service, upload the attached inspections data, and do some quick data profiling?  
Thanks!  
-Dave

 Restaurant Inspection Data.csv

## Solution Preview



What are the 3 types of *grades*?

- A, B, C

What does the *violation\_status* field contain?

- Two text values “Out of Compliance” & “Violation”

How many facilities are included in the dataset?

- 44,031 (distinct count)



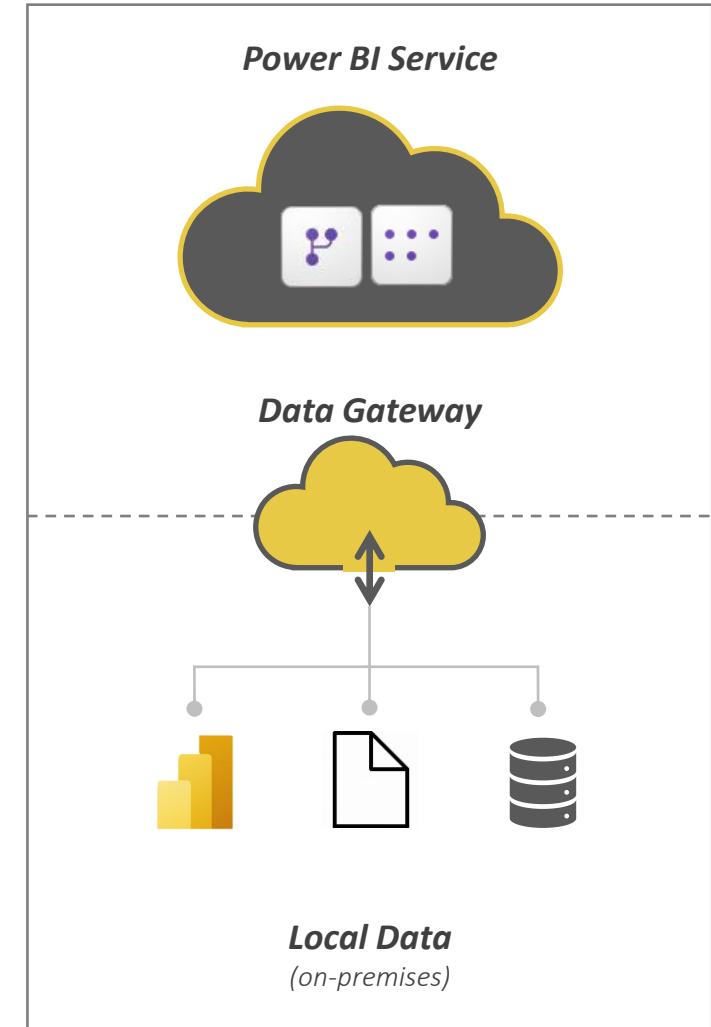
# DATA GATEWAYS

A **Data Gateway** acts like a bridge connecting on-premises data sources to Power BI, without needing to move data to the cloud

- ✓ Connect various on-premises sources and systems
- ✓ Allows you to keep data securely on your network (*no duplication*)
- ✓ Enables options like scheduled refresh
- ✓ Works with other cloud services (*Analysis Services, Data Factory, etc.*)
- ✓ Ensures secure data transfer

Important limitations & considerations:

- Gateways are currently only supported for **Windows machines**
- To use scheduled refresh with Excel, your file **must contain a data model**





# GATEWAY TYPES

There are two types of gateways in Power BI Service: **Personal Mode** and **Standard Mode**

	PERSONAL MODE	STANDARD MODE
Compatible cloud services	Power BI	<ul style="list-style-type: none"><li>Power BI, Power Apps, Power Automate</li><li>Azure Logic Apps, Azure Analysis Services</li><li>Dataflows</li></ul>
Multi-user support		●
Runs as an app for non administrators	●	
Runs as a single user	●	
Import data & set up scheduled refresh	●	●
Direct Query support		●
Live connection to Analysis Services		●



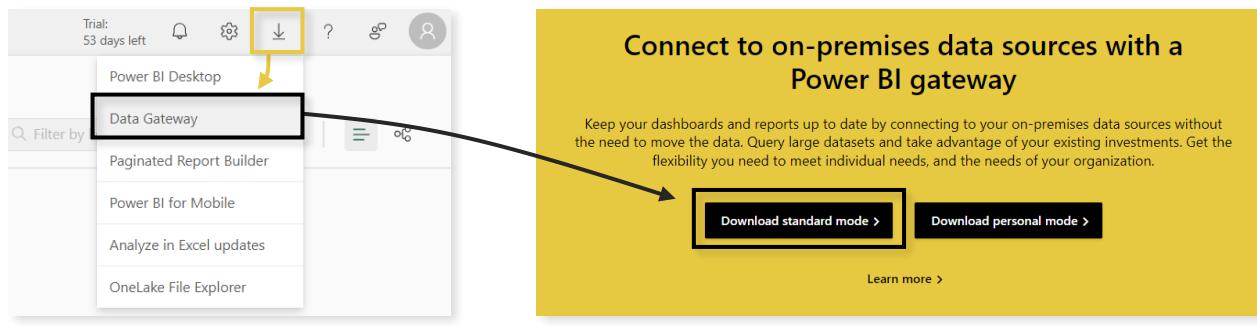
## PRO TIP:

Use the **Standard Mode Gateway**; it allows for everything the personal mode gateway does, supports multiple cloud services, and can be shared with others in your organization

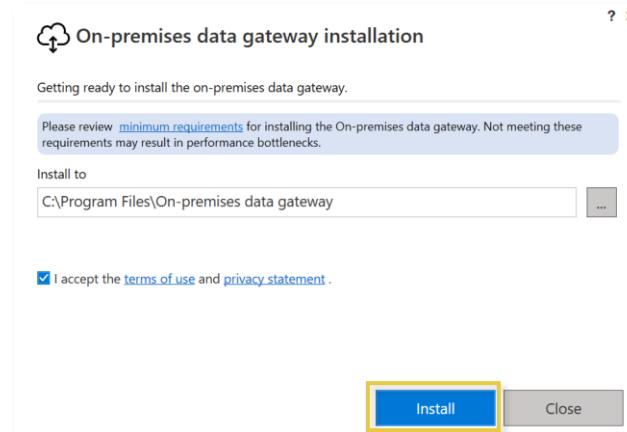


# SETTING UP A GATEWAY

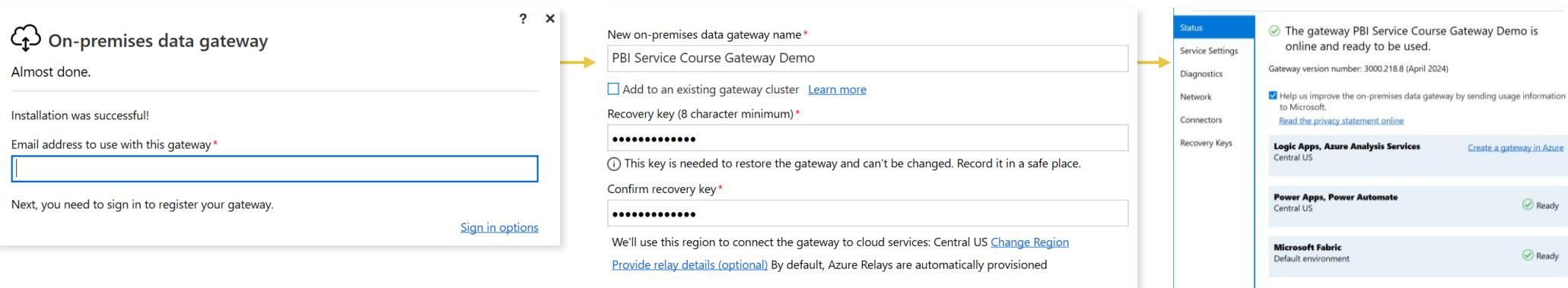
- 1** Select **Data Gateway** from the **Download** menu, or head directly to [powerbi.microsoft.com/gateway](https://powerbi.microsoft.com/gateway) and click “**Download Standard Mode**”



- 2** Follow the **installation instructions**



- 3** Sign in using your Power BI Service credentials, then **create** a gateway name and recovery key





# CONFIRMING GATEWAY STATUS

To confirm the **gateway status**, click the gear icon and then select “Manage connections and gateways”

- Running gateways should be listed under “**On-premises data gateways**” with status “**Online**”

The screenshot shows the Microsoft Power BI service settings interface. On the left, a sidebar menu is open with several options: Settings, Preferences, Resources and extensions, Governance and insights, and Microsoft Purview hub (preview). The 'Manage connections and gateways' option under 'Resources and extensions' is highlighted with a yellow box and an arrow pointing to the main content area. In the main content area, there is a header with links for Details, Settings, Manage users, Remove, and Get help. To the right of the header is a search bar with the placeholder 'On-premises data gateways'. Below the header, there is a section titled 'Data (preview)' with a sub-section titled 'On-premises data gateways'. This section contains a brief description: 'The data gateway acts as a bridge, providing quick and secure data transfer between on-premises data and Power BI, Microsoft Flow, Logic Apps, and PowerApps.' A link to 'Learn more in this overview' is provided. Below this description is a table with columns: Name ↑, Contact info, Users, Status, and Gateways. A single row is visible for 'PBI Service Course Gateway Demo', which has a green checkmark icon, a three-dot ellipsis button, the email address '84659736@mavenbi.org', the user 'Aaron Parry', the status 'Online' (which is also highlighted with a yellow box), and the value '1' in the Gateways column. A large callout bubble at the bottom right contains a thumbs-up icon and the text: 'PRO TIP: If your gateway status shows **Offline**, click the status icon for troubleshooting tips'.

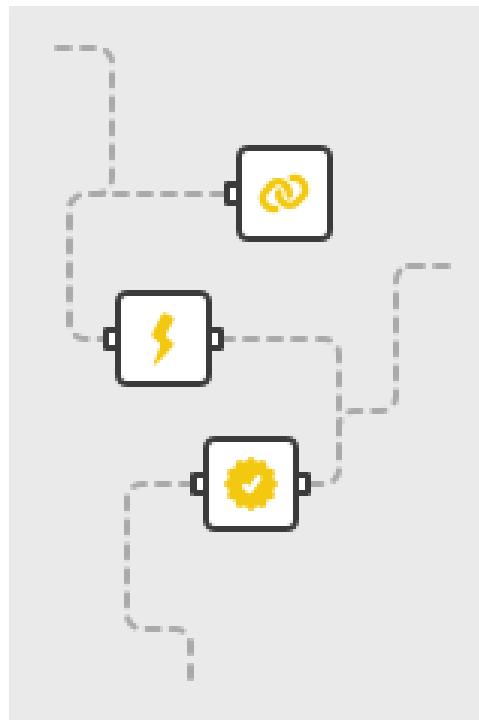
Name ↑	Contact info	Users	Status	Gateways
PBI Service Course Gateway Demo	84659736@mavenbi.org	Aaron Parry	Online	1

**PRO TIP:** If your gateway status shows **Offline**, click the status icon for troubleshooting tips



# DATAFLOWS

**Dataflows** are essentially cloud-based data pipelines (*like Power Query in the cloud*) that are used to extract, transform, store, and integrate data from a wide variety of sources



## Why Dataflows?

- ✓ Reuse queries across **semantic models** and **other dataflows**
- ✓ Run ETL (*extract, transform & load*) processes on **specific schedules**
- ✓ Create a centralized data warehouse to serve as a **single source of truth**
- ✓ Create, manage, and share reusable transformation logic

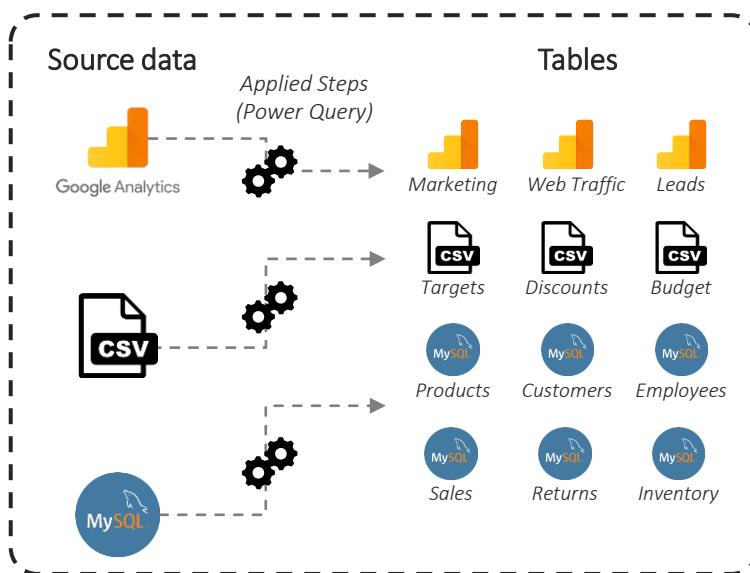
## How are Dataflows Implemented?

1. **Create** and **build** dataflows in Power BI Service
2. **Refresh dataflow** in Power BI Service
3. **Connect to a dataflow** as the data source in Power BI Desktop



# DATAFLOWS

## 1 CREATE



## 2 ACCESS

The screenshot shows the "Common data sources" pane in Power BI Desktop. The "Dataflows" section is highlighted with a yellow box and a yellow arrow points to it from the "CREATE" section above. Below the list, a preview of the "Fuzzy Factory - Orders" table is shown:

order_id	created_at	website_se
1	3/19/2012 10:42:46	
2	3/19/2012 19:27:37	
3	3/20/2012 06:44:45	
4	3/20/2012 09:41:45	
5	3/20/2012 11:28:15	
6	3/20/2012 16:12:47	
7	3/20/2012 17:03:41	
8	3/20/2012 23:35:27	
9	3/21/2012 02:35:01	
10	3/21/2012 06:45:58	
11	3/21/2012 07:28:02	
12	3/21/2012 08:21:33	

## 3 PUBLISH

The screenshot shows the "Workspace" page in the Power BI Service. The "Dataflows" section is highlighted with a yellow box. The table below lists various items in the workspace:

Name	Type	Owner
Fuzzy Factory	Folder	—
Dataflow 1	Dataflow Gen2	Aaron Parry
Inspection Services	Dataflow	Aaron Parry
Restaurant Inspections	Report	Workspace
Restaurant Inspections	Semantic model	Workspace
Restaurant Inspections Dash	Dashboard	Workspace
Usage Metrics Report	Report	Workspace



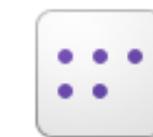
### Create the Dataflow in Service

Connect to a data source, apply transformations with Power Query, and save as a table



### Access the Dataflow in Desktop

From the **Get data** menu, select **Dataflows** as the data source, navigate to the workspace, and select the table to load



### Publish as a Semantic Model

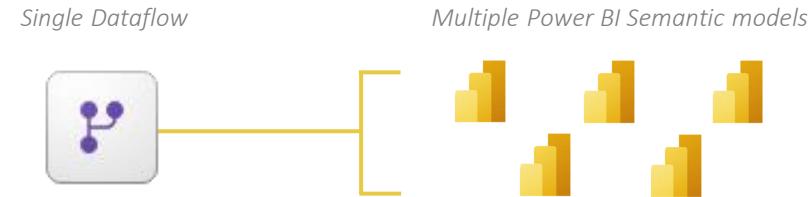
After the dataflow is loaded via Power BI Desktop, publish to Service and it will appear as a new **semantic model**



# DATAFLOW USE CASES

## USE CASE #1 Create reusable transformation logic that can be shared across many semantic models

- Need to use the same query across multiple reports? Create a **single dataflow** and connect to it as a data source, instead of creating a brand-new connection and replicating your applied steps each time



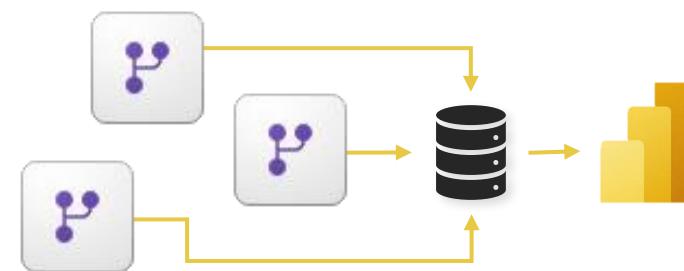
## USE CASE #2 Create scheduled refreshes to align with reporting cadence

- For example, schedule one dataflow to refresh at **8 am** for your internal KPI report, and another to refresh **weekly** for your executive client dashboard

	Name	Type	Owner	Refreshed	Next refresh
	Fuzzy Factory Data	Dataflow	Aaron Parry	4/24/24, 4:15:27 PM	4/26/24, 8:00:00 AM

## USE CASE #3 Create a single source of truth and centralize critical ETL processes

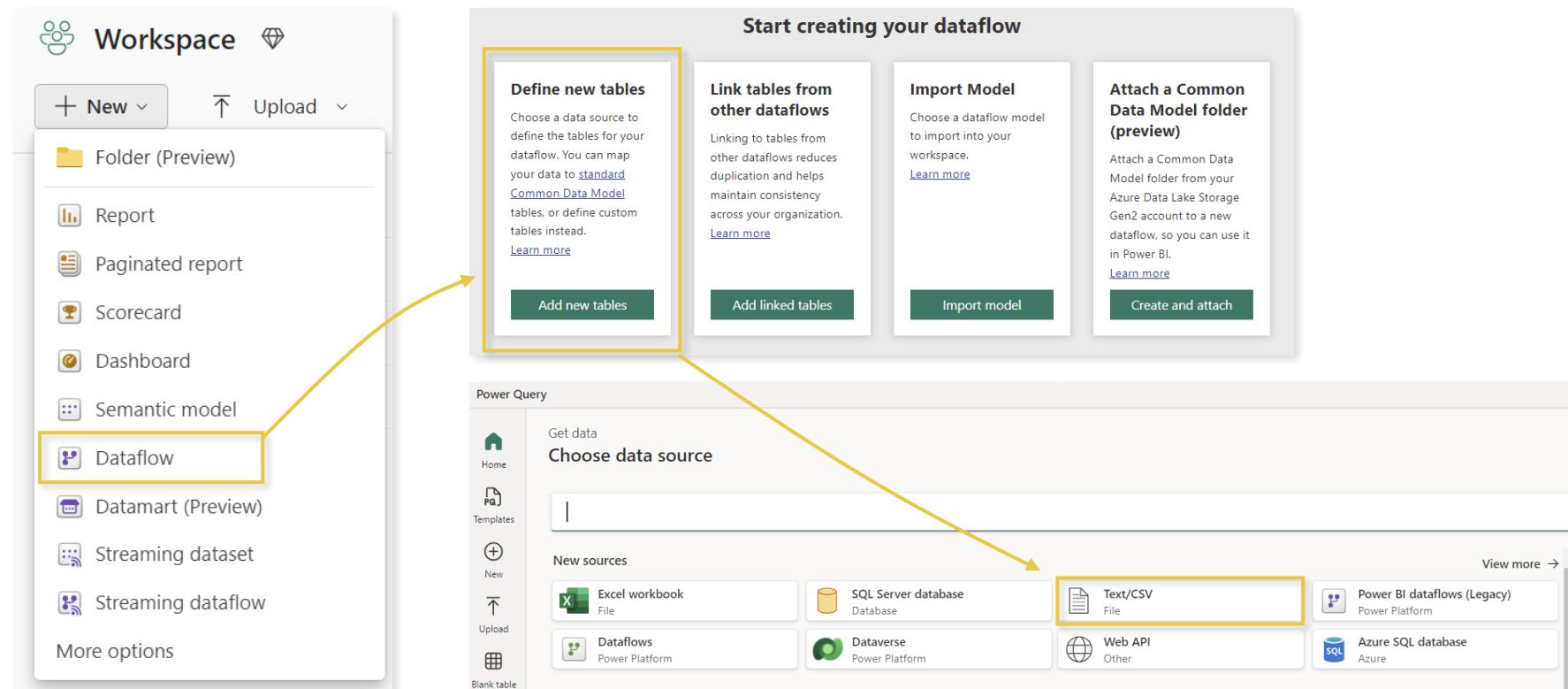
- Maintaining separate ETL processes across reports with the same data is tedious, inefficient, and error-prone; Dataflows allow you to create, manage, and QA those processes in **one central place**





# CREATING A DATAFLOW (LOCAL FILE)

## 1 Create a **new dataflow\*** and choose a **data source**





# CREATING A DATAFLOW (LOCAL FILE)

## 2 Enter your **connection settings** and **credentials**

Type/paste the complete *file path* (without quotes/tick marks)

Select an installed, running *gateway*

Select the type of *authentication*

**HEADS UP!**  
Access to **OneDrive for Business** is required to upload files or enter a file path to browse OneDrive

**Connection settings**

Link to file  Upload file (Preview) (Preview)

File path or URL \*  
Example: https://contoso-my.sharepoint.com/personal/an...

**Connection credentials**

Connection: Create new connection

Connection name: Connection

Data gateway: (none)

Authentication kind: Anonymous

Privacy Level: None

**HEADS UP!**  
Access to **OneDrive for Business** is required to upload files or enter a file path to browse OneDrive

**Connection settings**

Link to file  Upload file (Preview) (Preview)

Drag a file here to upload  
or

**Browse OneDrive**

**Pick a file**

**My files**

Name	Modified
Documents	October 20, 2023
Microsoft Power BI Desktop for Business Int...	May 24, 2023
Attachments	March 22, 2023



# CREATING A DATAFLOW (LOCAL FILE)

## 2 Enter your **connection settings** and **credentials**

**Connection credentials**

Connection  
Create new connection

Connection name  
G:\Shared drives\Author Drive (A. Parry)\1\_Microsoft Pow...

Data gateway \*  
[On-premises] Maven Analytics BI

Authentication kind  
Windows

Username  
domain\alias

Password

Privacy Level  
None

Enter username and password

**OPTION 1:** Enter a Microsoft administrator account username/password that can **sign you in to all apps**

**NOTE:** You may need to adjust your password settings by heading to **Account > Sign-in options** (Windows 11)

**Email & accounts**

Accounts used by other apps

Add the accounts you use for your apps here, and sign in to your favorite apps easier and faster.

Add a Microsoft account

Add a work or school account

 @gmail.com  
Microsoft account  
All apps can sign me in  
  
 @mavenanalytics.io  
Work or school account

Manage

(Windows Settings > Accounts > Email & Accounts)



# CREATING A DATAFLOW (LOCAL FILE)

## 2 Enter your **connection settings** and **credentials**

**Connection credentials**

Connection  
Create new connection

Connection name  
G:\Shared drives\Author Drive (A. Parry)\1\_Microsoft Pow...

Data gateway \*  
[On-premises] Maven Analytics BI

Authentication kind  
Windows

Username  
domain\alias

Password

Privacy Level  
None

**OPTION 2:** Type “**whoami**” in the Command Prompt & press Enter to find your username

```
Microsoft Windows [Version 10.0.22621.3447]
(c) Microsoft Corporation. All rights reserved.

C:\Users\ampar>whoami
aaronpc\ampar
```

Enter username and password



### HEY THIS IS IMPORTANT!

If you use a PIN or physical biometric protection (*fingerprint or facial recognition*) to access your computer, you may need to use your Microsoft account password

# CREATING A DATAFLOW (LOCAL FILE)



## 3 Use Power Query to **clean**, **transform** and **shape** your data prior to saving the Dataflow

## Data Preview

Power Query Editor

Home Transform Add column View Help

Get data v Enter data Manage connections Options Manage parameters v Refresh Advanced editor Properties Choose columns v Remove columns v Keep rows v Remove rows v Filter rows v Sort Split column v Group by Use first row as headers v Replace values Transform Combine v Map to entity CDM AI insights Export template Share

Queries [1]  fx Restaurant Inspection ...

	activity_date	employee_id	facility_address	region_id	facility_city	facility_id	facility_name	facility_state	facility_zip	grade
1	7/1/2015	EEO00072	4620 MELROSE AVE	6 LOS ANGELES	FA0045100	PRAEL THAI RESTAURANT	CA	90029	A	
2	7/1/2015	EEO000722	4620 MELROSE AVE	6 LOS ANGELES	FA0045100	PRAEL THAI RESTAURANT	CA	90029	A	
3	7/1/2015	EEO000722	4620 MELROSE AVE	6 LOS ANGELES	FA0045100	PRAEL THAI RESTAURANT	CA	90029	A	
4	7/1/2015	EEO000722	4620 MELROSE AVE	6 LOS ANGELES	FA0045100	PRAEL THAI RESTAURANT	CA	90029	A	
5	7/1/2015	EEO000722	4620 MELROSE AVE	6 LOS ANGELES	FA0045100	PRAEL THAI RESTAURANT	CA	90029	A	
6	7/1/2015	EEO000722	4620 MELROSE AVE	6 LOS ANGELES	FA0045100	PRAEL THAI RESTAURANT	CA	90029	A	
7	7/1/2015	EEO000884	1144 S WESTERN AVE #102	6 LOS ANGELES	FA0174240	KIMCHI PLUS	CA	90006	A	
8	7/1/2015	EEO000884	1144 S WESTERN AVE #102	6 LOS ANGELES	FA0174240	KIMCHI PLUS	CA	90006	A	
9	7/1/2015	EEO000884	1144 S WESTERN AVE #102	6 LOS ANGELES	FA0174240	KIMCHI PLUS	CA	90006	A	
10	7/1/2015	EEO000884	1144 S WESTERN AVE #102	6 LOS ANGELES	FA0174240	KIMCHI PLUS	CA	90006	A	
11	7/1/2015	EEO000923	5008 N FIGUEROA ST	6 LOS ANGELES	FA0038664	MCDONALD'S #26929	CA	90042	A	
12	7/1/2015	EEO000923	5008 N FIGUEROA ST	6 LOS ANGELES	FA0038664	MCDONALD'S #26929	CA	90042	A	
13	7/1/2015	EEO00082	6767 W SUNSET BLVD STE ...	6 LOS ANGELES	FA029375	QUIZNO'S SUB HOLLYWOOD	CA	90028	A	
14	7/1/2015	EEO000923	2590 GLENDALE BLVD	6 LOS ANGELES	FA0071261	SUBWAY SANDWICH #18772	CA	90039	A	
15	7/1/2015	EEO000923	2590 GLENDALE BLVD	6 LOS ANGELES	FA0071261	SUBWAY SANDWICH #18772	CA	90039	A	
16	7/1/2015	EEO000727	11777 SAN VICENTE BLVD	6 LOS ANGELES	FA0032715	KATSUYA	CA	90049	A	
17	7/1/2015	EEO000727	11777 SAN VICENTE BLVD	6 LOS ANGELES	FA0032715	KATSUYA	CA	90049	A	
18	7/1/2015	EEO000727	11777 SAN VICENTE BLVD	6 LOS ANGELES	FA0032715	KATSUYA	CA	90049	A	
19	7/1/2015	EEO001049	619 S ATLANTIC BLVD	6 LOS ANGELES	FA0065820	LITTLE FARMERS MARKET	CA	90022	A	
20	7/1/2015	EEO000923	5008 N FIGUEROA ST	6 LOS ANGELES	FA0038664	MCDONALD'S #26929	CA	90042	A	
21										

Completed (2.32 s) Columns: 25 Rows: 99+ Step Save & close Cancel

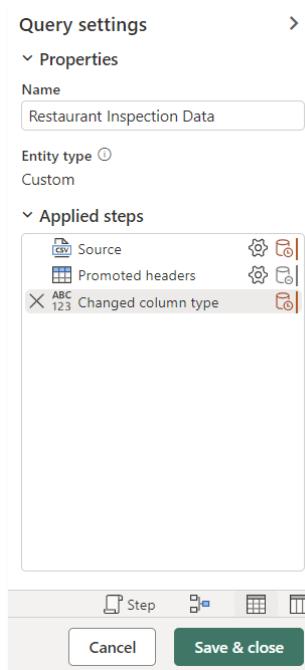
Query settings

Properties Name Restaurant Inspection Data Entity type Custom Applied steps Source Promoted ... ABC Changed c...



# CREATING A DATAFLOW (LOCAL FILE)

## 4 Name, save, and refresh your dataflow



### Save your dataflow

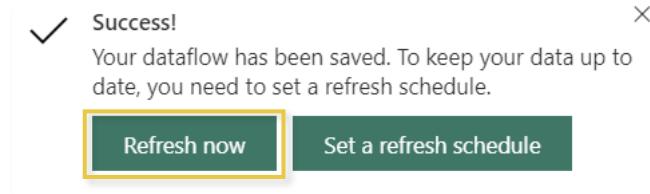
Name \*

Description  
Dataset contains restaurant specific records, employee data, violation codes and status, owner data, and more

**Save** **Cancel**

Add a **name** and optional **description**, and **save** your dataflow

Click **Save & close** to validate and process the query



Click **Refresh now** to "lock in" your dataflow



### HEY THIS IS IMPORTANT!

You **must** refresh your dataflow before it can be used as a data source in Power BI



# DATAFLOW INTERFACE

**TABLE NAME**  
Expand to see a list of columns in the table

**EDIT TABLES**  
Opens Power Query in the cloud to enable edits & updates

**ADD TABLES**  
Add a new or linked table to your dataflow

**ACTIONS**

**EDIT TABLE**  
Opens Power Query in the cloud and links to selected entity to enable edits & updates

**PROPERTIES**  
Add a description of the table/entity to provide additional context

**INCREMENTAL REFRESH**  
Configure an incremental refresh policy, including row storage and refresh settings (requires Premium Workspace)



# CONNECTING TO A DATAFLOW IN DESKTOP

Connect to a dataflow and **load it as a semantic model** in Power BI Desktop

The screenshot illustrates the process of connecting to a dataflow in Power BI Desktop and loading it as a semantic model.

**Home ribbon:** The "Dataflows" option is highlighted with a yellow arrow, indicating the starting point for the connection.

**Navigator pane:** The "Dataflows [2]" section is expanded, showing the "Restaurant Inspection Data" dataflow selected with a yellow checkmark.

**Data pane:** The "Restaurant Inspection Data" semantic model is listed under "Recent sources". The "Load" button at the bottom of the pane is highlighted with a yellow arrow.

**Table Preview:** The "Restaurant Inspection Data" table is displayed with the following schema and sample data:

activity_date	employee_id	facility_address	region_id	facility_city
7/1/2015	EE0000722	4620 MELROSE AVE	6	LOS ANGELES
7/1/2015	EE0000722	4620 MELROSE AVE	6	LOS ANGELES
7/1/2015	EE0000722	4620 MELROSE AVE	6	LOS ANGELES
7/1/2015	EE0000722	4620 MELROSE AVE	6	LOS ANGELES
7/1/2015	EE0000722	4620 MELROSE AVE	6	LOS ANGELES
7/1/2015	EE0000722	4620 MELROSE AVE	6	LOS ANGELES
7/1/2015	EE0000884	1144 S WESTERN AVE #102	6	LOS ANGELES
7/1/2015	EE0000884	1144 S WESTERN AVE #102	6	LOS ANGELES
7/1/2015	EE0000884	1144 S WESTERN AVE #102	6	LOS ANGELES
7/1/2015	EE0000884	1144 S WESTERN AVE #102	6	LOS ANGELES
7/1/2015	EE0000923	5008 N FIGUEROA ST	6	LOS ANGELES
7/1/2015	EE0000923	5008 N FIGUEROA ST	6	LOS ANGELES
7/1/2015	EE0000822	6767 W SUNSET BLVD STE 1A	6	LOS ANGELES
7/1/2015	EE0000923	2590 GLENDALE BLVD	6	LOS ANGELES
7/1/2015	EE0000923	2590 GLENDALE BLVD	6	LOS ANGELES
7/1/2015	EE0000727	11777 SAN VICENTE BLVD	6	LOS ANGELES
7/1/2015	EE0000727	11777 SAN VICENTE BLVD	6	LOS ANGELES
7/1/2015	EE0000727	11777 SAN VICENTE BLVD	6	LOS ANGELES
7/1/2015	EE0001049	619 S ATLANTIC BLVD	6	LOS ANGELES
7/1/2015	EE0000923	5008 N FIGUEROA ST	6	LOS ANGELES

The data in the preview has been truncated due to size limits.

**Bottom pane buttons:** Load, Transform Data, Cancel.



# ASSIGNMENT: CONNECTING TO A DATAFLOW



**NEW MESSAGE**

From: **Susie Salt (Inspector)**

Subject: **Dataflow build out**

Hey there!

I know you've been working with the team to start building our new report and reporting automation – exciting stuff!

I'd love to start building the new report soon. Could you add the rest of the data sources to the dataflow by the end of the week?

Thanks!  
-Susie

**Reply**    **Forward**

## Key Objectives

1. Add all remaining tables to the Inspection Team dataflow (**calendar, city, inspector, region, restaurant name** and **sanitary grade**)
2. Save, close, and refresh the dataflow
3. Edit the Inspection Team dataflow and add the following transformations to the Calendar table
  - Set *Transaction\_Date* as a Date field
  - Add new calculated columns for *Year*, *Quarter of Year*, *Month*, *Start of Year*, *Start of Month* and *Start of Week*



# ASSIGNMENT: CONNECTING TO A DATAFLOW



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Thanks!  
-Susie

**Reply**    **Forward**

## ***Key Objectives (cont.)***

4. Add the follow transformations to the **restaurant name** & **sanitary grade** tables
  - Promote first rows to header
  - Refresh the dataflow from the Workspace view
5. Using the Restaurant Inspections workbook, connect to all remaining tables in the dataflow
  - Disable “automatically create relationships”
  - Connect to Inspection Team dataflow and import the 6 tables created in objective 1
  - Save your work!



# SOLUTION: CONNECTING TO A DATAFLOW



**NEW MESSAGE**

From: **Susie Salt (Inspector)**

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Thanks!  
-Susie

**Reply**    **Forward**

## Solution Preview

Tables

TABLE NAME	TABLE TYPE	ACTIONS
Restaurant Inspection Data	Custom	[Edit] [Delete] [More]
Calendar Lookup	Custom	[Edit] [Delete] [More]
City Lookup	Custom	[Edit] [Delete] [More]
Inspector Lookup	Custom	[Edit] [Delete] [More]
Region Lookup	Custom	[Edit] [Delete] [More]
Restaurnat Name Lookup	Custom	[Edit] [Delete] [More]
Sanitary Grade Lookup	Custom	[Edit] [Delete] [More]

File Home Help External tools

Clipboard Paste Get data from OneLake data hub Data Transform data Refresh Manage relationships New measure column New table New calculation New group Manage roles View as Security Q&A Lang setup

Calendar Lookup City Lookup Inspector Lookup Region Lookup Restaurnat Name Lookup Sanitary Grade Lookup

Restaurant Inspection Data

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# CREATING A DATAFLOW (CLOUD DATABASE)

You can create dataflows from **cloud database** sources like Azure, AWS or Google Cloud

The screenshot illustrates the process of creating a dataflow from a MySQL database. It shows two main panels: 'Get data' and 'Choose data'.

**Get data - New source:** This panel lists various database types. The 'MySQL database' option is selected and highlighted with a yellow box. A yellow arrow points from this selection to the 'Connection settings' dialog.

**Connection settings:** This dialog contains fields for 'Server' (URL) and 'Database' (name). It also includes sections for 'Connection credentials' (connection name, authentication kind, username, password, privacy level), and a checkbox for 'Use encrypted connection'. The entire dialog is highlighted with a yellow box.

**Choose data:** This panel shows a list of tables from the selected MySQL database. Several tables are checked, including 'mavenfuzzyfactory\_development.orders', 'mavenfuzzyfactory\_development.products', and 'mavenfuzzyfactory\_development.website\_pageviews'. A yellow arrow points from the 'Choose data' panel to the table list. On the right side of this panel, a preview of the 'website\_pageviews' table is shown, displaying columns like 'website\_pageview\_id', 'created\_at', and 'web' with 17 rows of sample data.



# CREATING A DATAFLOW (LOCAL MYSQL)

You can create dataflows from **locally hosted databases** like MySQL Community Server

**Connection settings**

Server \*  
127.0.0.1

Database \*  
mavenfuzzyfactory\_development

> Advanced options

**Connection credentials**

Connection  
127.0.0.1;mavenfuzzyfactory\_development ([On-premis...)

Connection name  
127.0.0.1;mavenfuzzyfactory\_development

Data gateway  
[On-premises] PBI Demo Gateway

Authentication kind  
Basic

Username  
root

Password  
\*\*\*\*\*

Privacy Level  
None

Use encrypted connection

→ Local host address and database name

→ Gateway running on my computer

→ Username & password for community server

Get data  
Choose data

Search

Display options

- sys.x\$waits\_by\_host\_by\_latency
- sys.x\$waits\_by\_user\_by\_latency
- sys.x\$waits\_global\_by\_latency
- mavenfuzzyfactory\_development.order\_item\_refunds
- mavenfuzzyfactory\_development.order\_items
- mavenfuzzyfactory\_development.orders
- mavenfuzzyfactory\_development.products
- mavenfuzzyfactory\_development.website\_pageviews
- mavenfuzzyfactory\_development.website\_sessions
- mavenfuzzyfactory\_production.order\_item\_refunds
- mavenfuzzyfactory\_production.order\_items
- mavenfuzzyfactory\_production.orders

Select related tables

website_pageview_id	created_at	website_session_id	pageview_url
1	3/19/2012, 8:04:16 AM	1	/home
2	3/19/2012, 8:16:49 AM	2	/home
3	3/19/2012, 8:26:55 AM	3	/home
4	3/19/2012, 8:37:33 AM	4	/home
5	3/19/2012, 9:00:55 AM	5	/home
6	3/19/2012, 9:05:46 AM	6	/home
7	3/19/2012, 9:06:27 AM	7	/home
8	3/19/2012, 9:10:08 AM	6	/products
9	3/19/2012, 9:10:52 AM	6	/the-original-mr-fuzzy
10	3/19/2012, 9:14:02 AM	6	/cart
11	3/19/2012, 9:16:52 AM	6	/shipping
12	3/19/2012, 9:17:17 AM	8	/home
13	3/19/2012, 9:19:52 AM	6	/billing
14	3/19/2012, 9:27:56 AM	9	/home
15	3/19/2012, 9:35:37 AM	10	/home
16	3/19/2012, 9:37:42 AM	11	/home
17	3/19/2012, 9:39:57 AM	12	/home

## HEY THIS IS IMPORTANT!

We **won't set up community server** as part of this course; the purpose is to show that you can connect to MySQL running on your computer and don't need to pay for a cloud solution to store data in an RDS



# GEN1 VS. GEN2 DATAFLOWS

**Dataflow Gen2** is the new generation of dataflows (*accessible from Data Factory*) that coexist with Power BI Gen1 Dataflows and include additional features and functionality

	Dataflows (Gen1)	Dataflows (Gen2)
Author dataflows with Power Query	●	●
Shorter authoring flow		●
Auto-save & background publishing		●
Data destinations ( <i>Azure, Lakehouse, Warehouse</i> )		●
Improved monitoring & refresh history		●
Data pipelines integration		●
High-scale compute		●
Get Data via dataflows connector	●	●
Direct Query via dataflow connector	●	
Incremental refresh	●	
AI Insights support	●	



# SCHEDULED REFRESH (DATAFLOW)

**Scheduled refresh** allows you to keep your Power BI reports up to date by automatically refreshing dataflows based on a given frequency and schedule

The screenshot shows the Power BI workspace interface. A dataflow named "Inspection Services" is selected. A context menu is open, and the "Power BI settings" option is highlighted with a yellow box and arrow. This leads to the "Settings" pane where the "Dataflows" tab is selected. The "Refresh" section is shown, with the "On" toggle switch turned on. The "Refresh frequency" dropdown is set to "Daily". The "Time zone" dropdown is set to "(UTC-02:00) Mid-Atlantic". The "Time" dropdown shows "7 00 AM" and "3 00 PM". The "Send refresh failure notifications to" section includes a checked checkbox for "Dataflow owner". Arrows from the text descriptions point to the corresponding UI elements.

Schedule refresh shortcut

Go to the **Dataflows** section

Set **daily** or **weekly** refresh frequencies based on a time zone

Build your **refresh schedule** (Pro licenses can add up to **8** refreshes per day, PPU can add up to **48**)

Configure **failure notifications**



# SCHEDULED REFRESH (SEMANTIC MODEL)

You can also configure **scheduled refresh** for semantic models

Semantic models   Workbooks   Dataflows

Refresh

Configure a refresh schedule

Define a data refresh schedule to import data

On

Refresh frequency

Daily

Time zone

(UTC-05:00) Eastern Time (US and Ca ▾)

Time

8 ▾ 30 ▾ AM ▾ X

3 ▾ 30 ▾ PM ▾ X

Add another time

Send refresh failure notifications to

Semantic model owner

These contacts:

Enter email addresses

Apply   Discard

Select **semantic models** to configure a refresh schedule

Set a **Frequency** (daily or weekly), **Time Zone**, and **Time** (half-hour increments)

	Name ↓	Type	Refreshed	Next refresh
	Restaurant Inspections	Report	4/26/24, 4:03:51 PM	—
	Restaurant Inspections	Semantic model	4/26/24, 4:03:51 PM	4/27/24, 8:30:00 AM
	Inspection Services	Dataflow	4/26/24, 1:15:33 PM	4/27/24, 8:00:00 AM

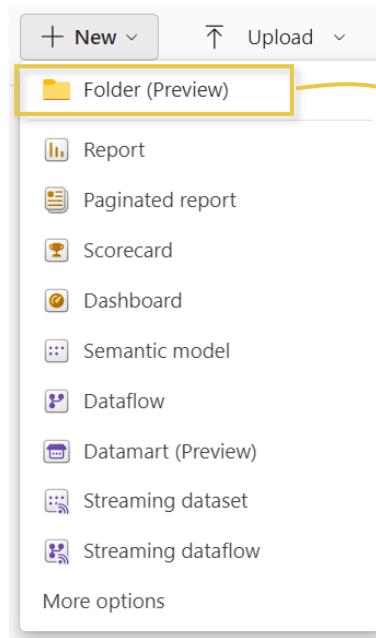
Confirm semantic model & dataflow **scheduled refreshes are running properly** (schedules align, errors, etc.)

 **PRO TIP:** If you use both, **offset the dataflow and semantic model refresh schedule** – if they run concurrently the report may not reflect recent updates



# PRO TIP: WORKSPACE FOLDERS

**Workspace folders** are a great way to organize similar types of content within a Power BI workspace



**Create** a new folder

Name	Type
Fuzzy Factory	Folder
Fuzzy Factory	Report
Fuzzy Factory	Semantic model
Fuzzy Factory	Dataflow
Inspection Services	Dataflow
Restaurant Inspections	Report
Restaurant Inspections	Semantic model

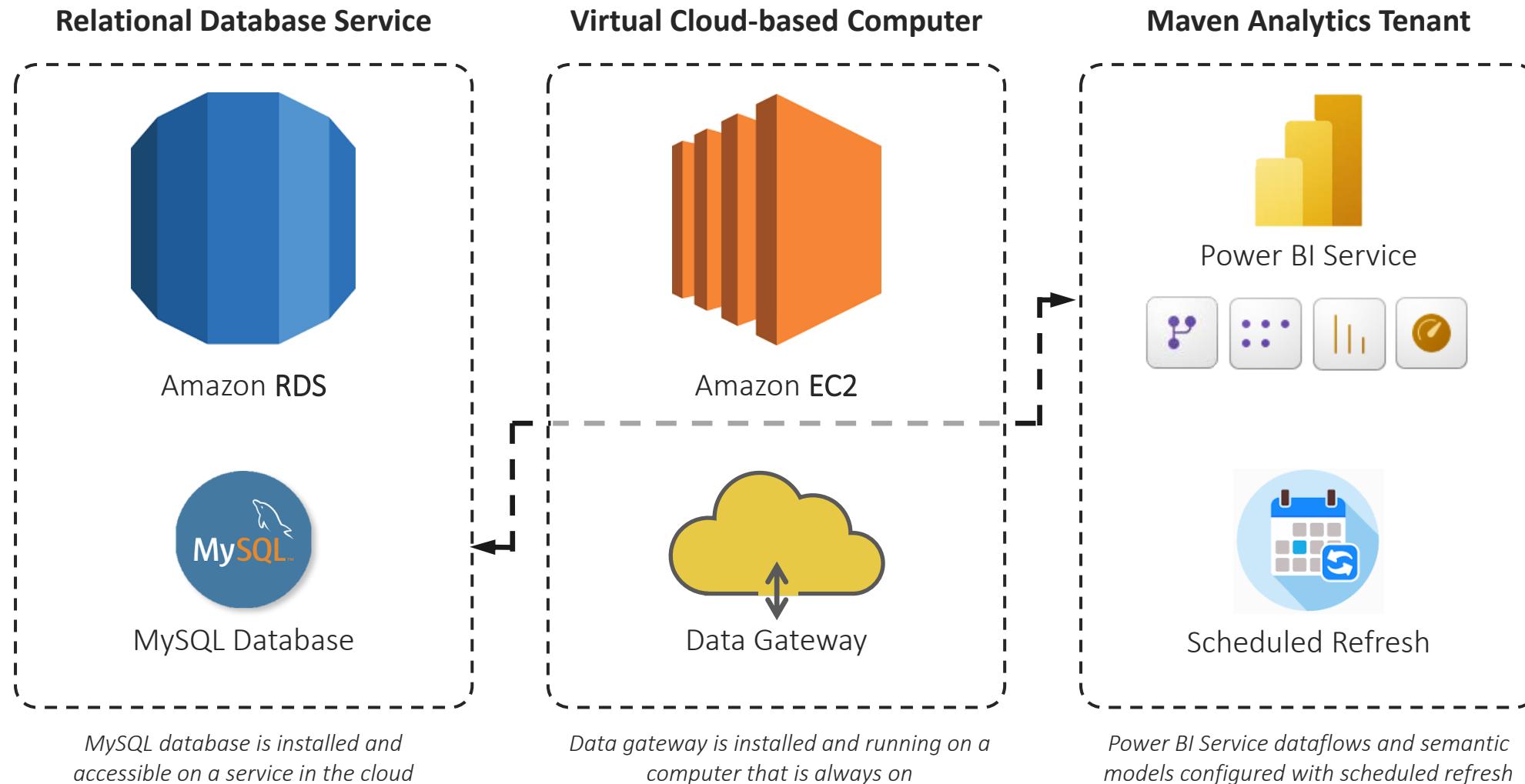
**Select** content types to move

Name	Type	Owner
Fuzzy Factory	Report	Workspace
Fuzzy Factory	Semantic model	Workspace
Fuzzy Factory	Dataflow	Aaron Parry

**Access** similar content from within the folder



# EXAMPLE: REAL-WORLD AUTOMATION SETUP



# ASSIGNMENT: FINISHING THE SEMANTIC MODEL





**NEW MESSAGE**

From: **Susie Salt (Inspector)**

Subject: **Completed Power BI model**

Hey there -

Happy Monday! I just got word from David and Samantha (the Chief Inspector) that we need to have a first draft of the semantic model complete by this Friday.

I know it's quick, but would you be able to wrap up your work in Power BI Desktop and publish to Service so we can start building the visual elements?

Thanks!  
-Susie

**Reply**    **Forward**

## Key Objectives

1. From the Model view, create relationships to connect the **Restaurant Inspection** table to all lookup tables
2. Confirm that relationships are one-way and one-to-many, and flow "downstream" to the data table
3. From the Table view, set the *facility\_zip* field in the **Restaurant Inspection** table as a category
4. Create **DAX measures** to calculate the following (*see text lesson for details*):
  - [Total Inspections] and [All Inspections]
  - [% of All Inspections]
  - [Prev. Month Total Inspections]
  - [Total Violations] and [All Violations]
  - [% of All Violations]
  - [Average Sanitary Grade] & [Prev. Month Avg Sanitary Grade]
  - [Grade A Inspections], [Grade B Inspections], [Grade C Inspections]
5. **Save & publish** the completed workbook to Service

# SOLUTION: FINISHING THE SEMANTIC MODEL



  NEW MESSAGE

From: **Susie Salt** (*Inspector*)  
Subject: **Completed Power BI model**

Hey there -

Happy Monday! I just got word from David and Samantha (the Chief Inspector) that we need to have a first draft of the semantic model complete by this Friday.

I know it's quick, but would you be able to wrap up your work in Power BI Desktop and publish to Service so we can start building the visual elements?

Thanks!  
-Susie

Reply Forward

## **Solution Preview**

## Manage relationships

Active	From: Table (Column)	To: Table (Column)
<input checked="" type="checkbox"/>	Restaurant Inspection Data (activity_date)	Calendar Lookup (Transaction_Date)
<input checked="" type="checkbox"/>	Restaurant Inspection Data (facility_city)	City Lookup (facility_city)
<input checked="" type="checkbox"/>	Restaurant Inspection Data (facility_name)	Restaurnat Name Lookup (facility_name)
<input checked="" type="checkbox"/>	Restaurant Inspection Data (grade)	Sanitary Grade Lookup (sanitation_grade)
<input checked="" type="checkbox"/>	Restaurant Inspection Data (region_id)	Inspector Lookup (assigned_region)
<input checked="" type="checkbox"/>	Restaurant Inspection Data (region_id)	Region Lookup (region_id)

**Column tools**

Summarization: Sum  
Data category: Postal code

Properties

Sort by column ▾

Sort

facility_state	facility_zip	grade	owner
CA	90004	A	OW00
CA	90039	A	OW00
CA	90006	A	OW00
CA	90045	A	OW00

**Measures Table**

- % of All Inspections
- % of All Violations
- All Inspections
- All Violations
- Average Sanitary Grade
- Grade A Inspections
- Grade B Inspections
- Grade C Inspections

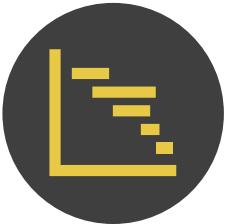
## KEY TAKEAWAYS

---

-  You can bring data into Service by **discovering existing content** from OneLake or Apps, or **creating new content** by importing/uploading files, connecting to database sources, or building dataflows
-  **Data Gateways** act like a bridge connecting on-premises data sources to Power BI, without needing to move data to the cloud
-  **Dataflows** are cloud-based data pipelines that can be used to extract, transform, store, and integrate data from a wide variety of sources
-  **Scheduled refresh** allows you to keep your Power BI reports up to date by automatically refreshing dataflows on a given frequency and schedule

# REPORTS & DASHBOARDS

# REPORTS & DASHBOARDS



In this section we'll cover **visuals**, **reports** and **dashboards** in Power BI Service, along with topics like data lineage, data modeling, alerts, natural language queries and quick insights

## TOPICS WE'LL COVER

Data Lineage

Reports & Dashboards

Data Driven Alerts

Natural Language  
Queries

Quick Insights

Mobile Design

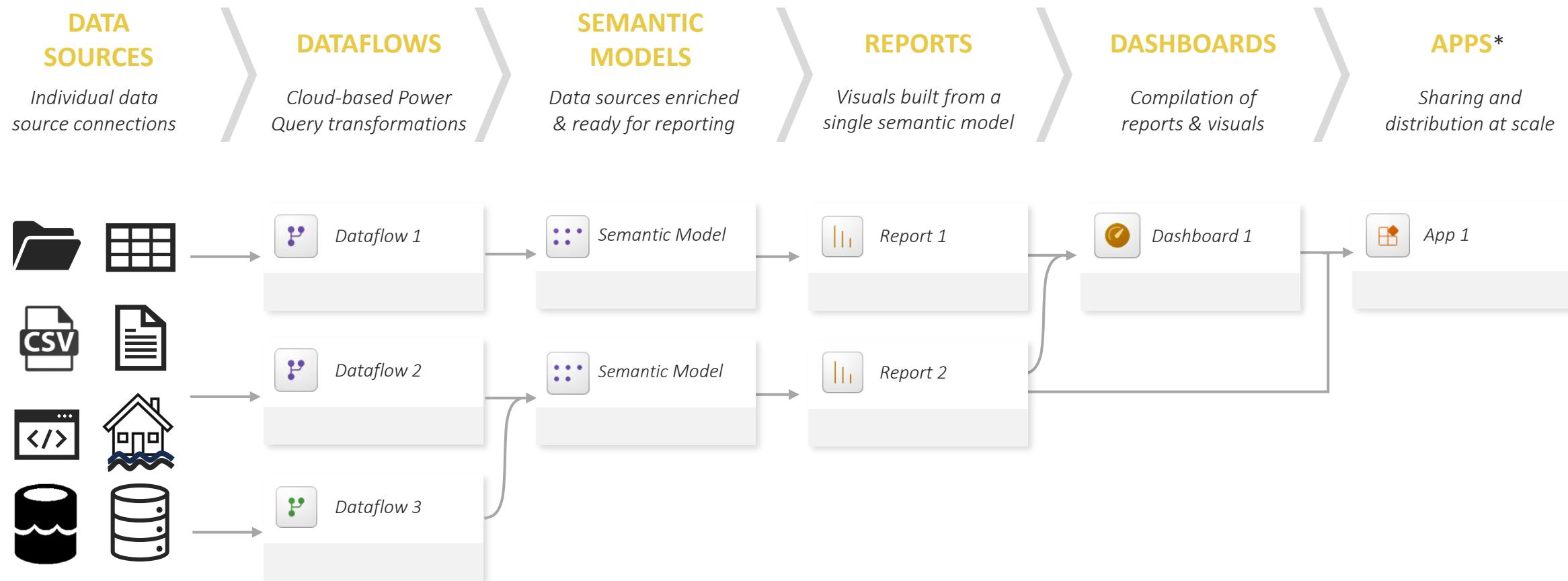
## GOALS FOR THIS SECTION

- *Build and format visuals in Power BI Service*
- *Assemble new reports and dashboards*
- *Configure data-driven alerts when key metrics reach a designated threshold*
- *Use the natural language Q&A and quick insights tools to explore and understand your data*
- *Design a mobile-optimized report layout*



# DATA LINEAGE

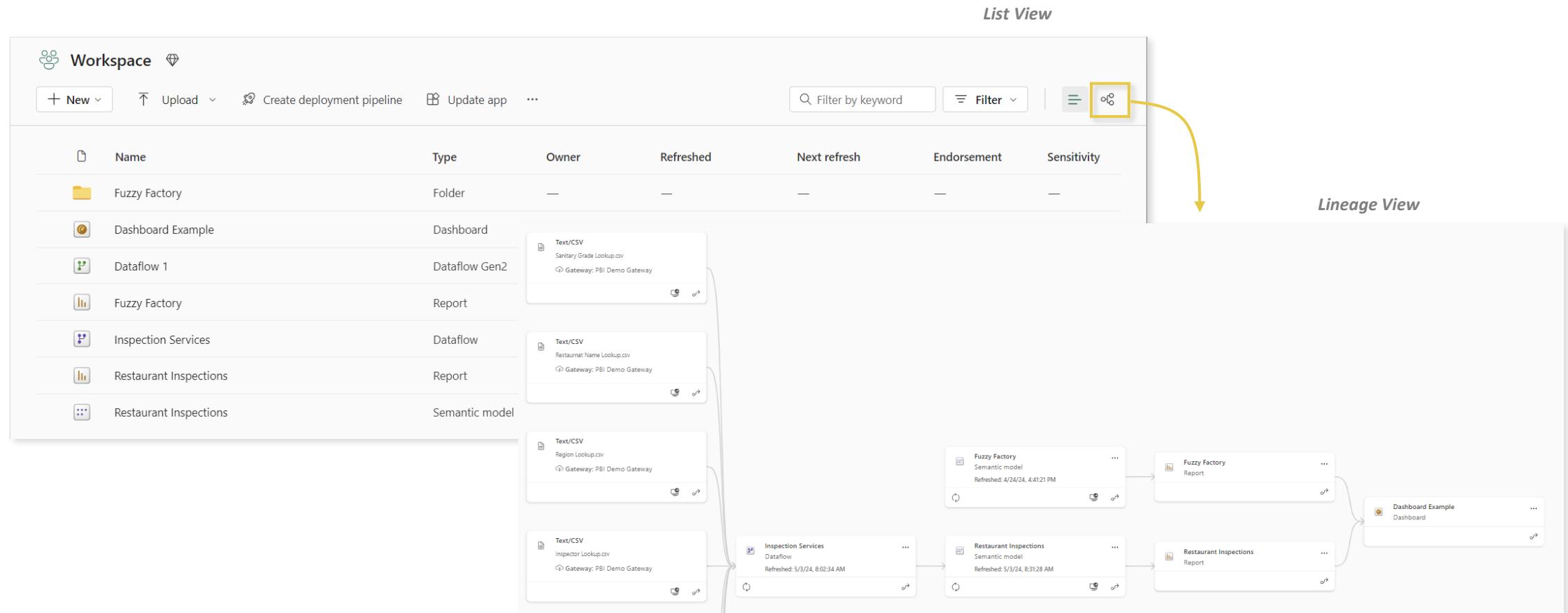
**Data lineage** refers to the flow of data from its source to destinations like dashboards or apps





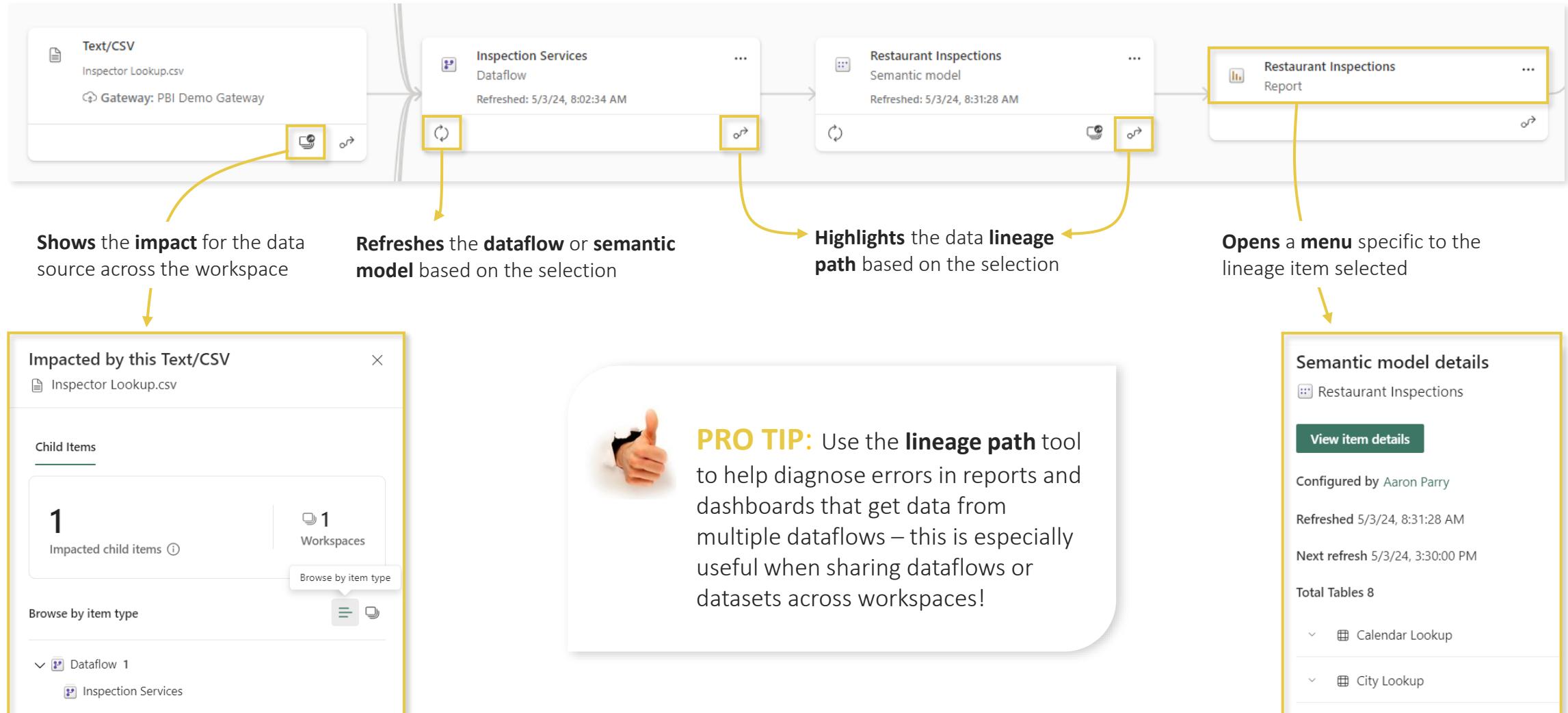
# DATA LINEAGE VIEW

**Lineage view** shows how data is linked across multiple data sources, workspaces, and dependencies





# DATA LINEAGE TOOLS

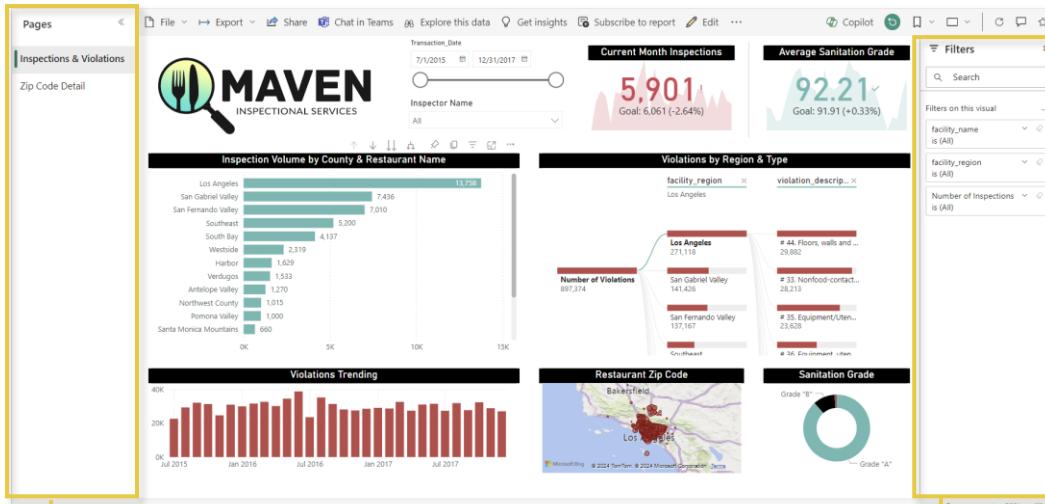




# REPORT VIEWS

## Reading View

For **exploring, filtering, and pinning** tiles and pages to dashboards

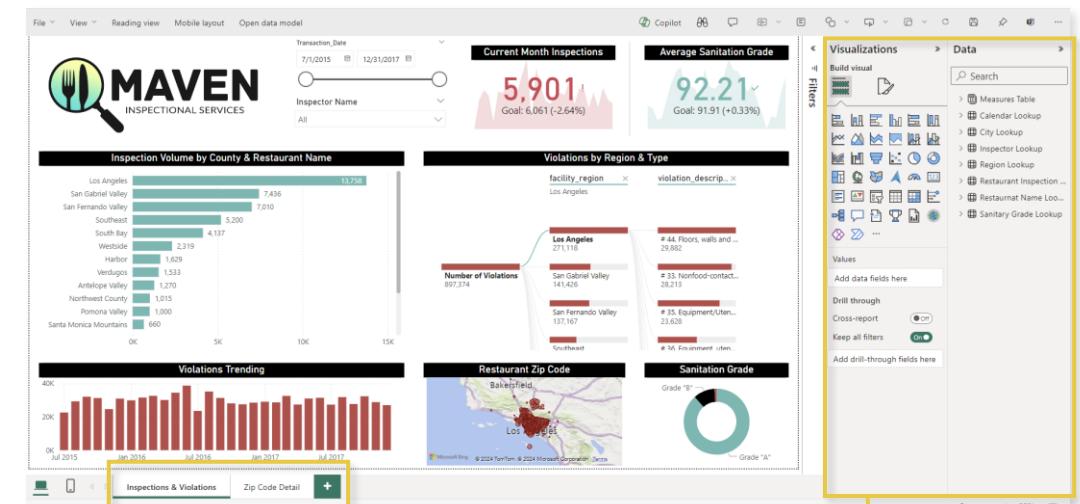


**Pages** (Navigate between different pages in your report)

**Filters Pane** (Visual-Level, Page-Level, Report-Level & Drill through Filters)

## Editing View

For **editing, modifying, and creating** report visuals

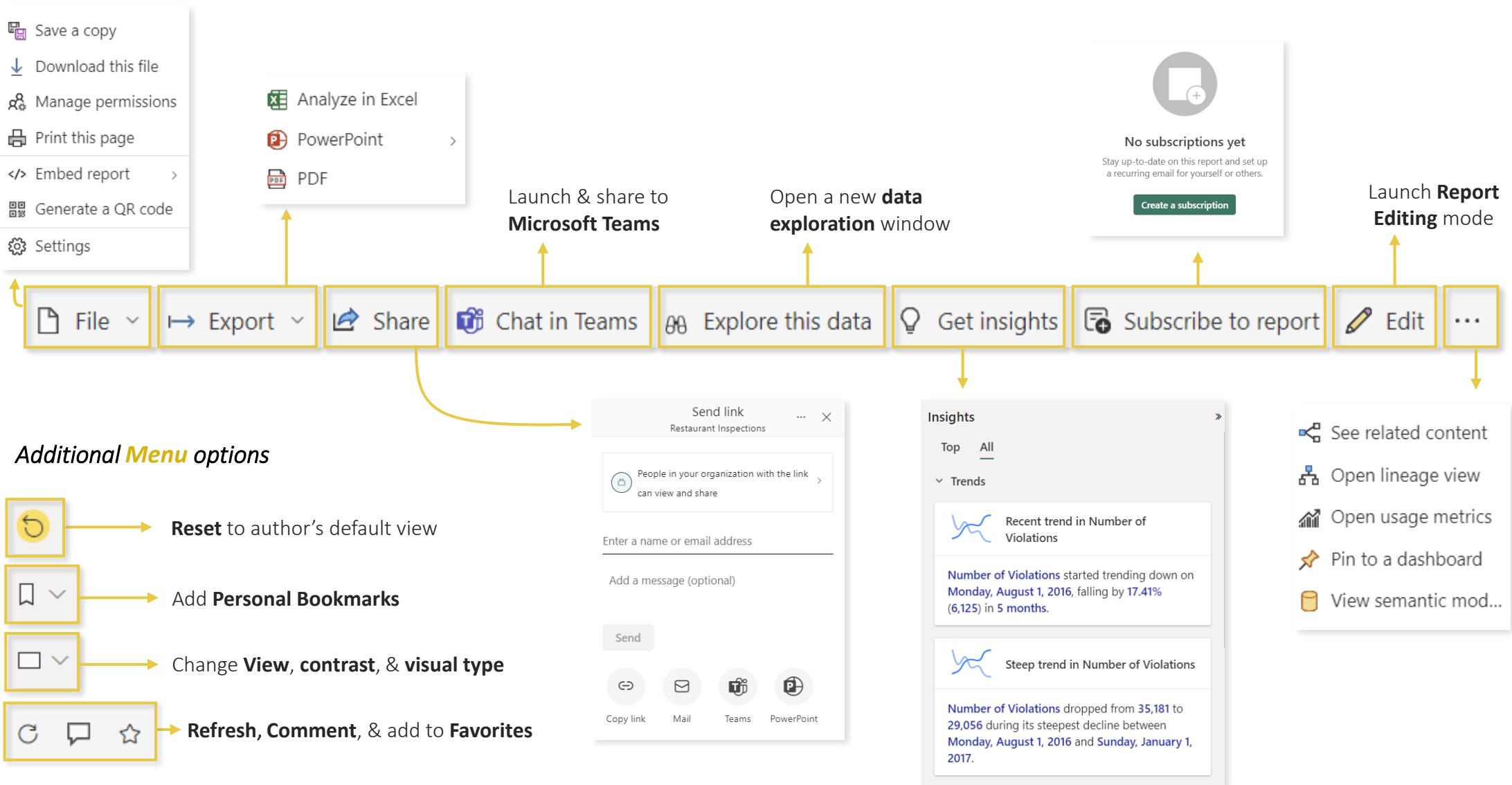


**Report Pages** (Just like Power BI Desktop, each serves as a blank reporting canvas)

**Visualization & Formatting Options** (Charts, Slicers, Maps, Matrices, etc.)  
**Filters Pane** (Drill through Filters)



# REPORT READING TOOLS





# REPORT EDITING TOOLS

The screenshot displays the Microsoft Power BI desktop application interface, illustrating various report editing tools:

- File** and **View** dropdown menus are highlighted with yellow boxes and arrows pointing to them from the top.
- Reading view**, **Mobile layout**, and **Open data model** buttons are also highlighted with yellow boxes and arrows pointing to them from the top.
- Save**, **Save as**, **Print**, **Embed**, **Embed in SharePoint Online**, **Publish to web**, **Export to PowerPoint**, **Export to PDF**, and **Download this file** buttons are listed on the left.
- A central area shows a mobile phone displaying a dashboard with "Current Month Inspections" (5,901), "Average Sanitation Grade" (92.21), and a "Violations Trending" chart.
- A "View" ribbon tab is open, showing settings for "Fit to page", "Fit to width", "Actual size", "High-contrast colors", "Show smart guides" (on), "Show gridlines" (off), "Snap to grid" (off), "Lock objects" (off), "Selection pane" (off), "Bookmarks pane" (off), "Sync slicers pane" (off), "Copilot pane" (off), and "Insights pane" (on).
- The **Open data model** button points to a semantic model editor window showing relationships between tables like "Calendar Lookup", "City Lookup", "Inspector Lookup", etc., and a "Measures Table".
- The right side of the interface includes a "Data" ribbon tab, a "Tables" section listing various lookups and data sources, and a "Model" section.

From the **data model in Service**, you can add or edit semantic model components like relationships, DAX measures, roles, etc.

**NOTE:** This feature must be enabled within your tenant



# REPORT EDITING TOOLS

Explore this data   Ask a question   Data/drill   Text box   Shapes   Buttons   Visual interactions   Pin to a dashboard   Chat in Teams   ...

Explore Restaurant Inspections (preview)

Show as a table   Off

- Show next level
- Expand to next level
- Drill up
- Drill down   Off
- Drill through   Off
- Show data point as a table   Off

Edit interactions   Off

Drilling filters other visuals   On

Generate a QR code  
Analyze in Excel  
Get insights

Insert **text, shapes, buttons, slicer actions and navigation**

Left arrow  
Right arrow  
Reset  
Back  
Information  
Help  
Q&A  
Bookmark  
Blank  
Apply all slicers  
Clear all slicers  
Navigator >

Preview: Last saved state

Pin to dashboard

Select an existing dashboard or create a new one.

Where would you like to pin to?

- Existing dashboard
- New dashboard

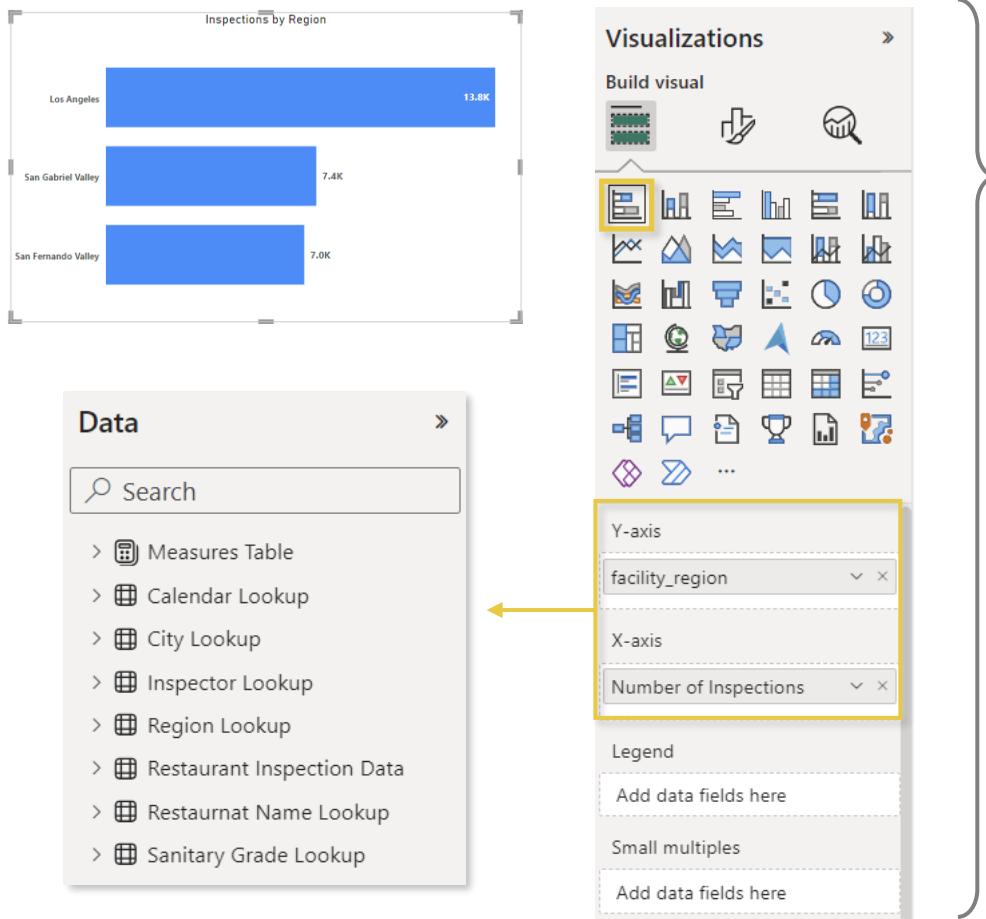
Dashboard name

Pin live   Cancel

The screenshot displays the Microsoft Power BI Report Editor interface. At the top, there's a ribbon bar with several buttons: 'Explore this data', 'Ask a question', 'Data/drill', 'Text box', 'Shapes', 'Buttons', 'Visual interactions', 'Pin to a dashboard' (which is highlighted with a yellow box and has a downward arrow pointing to a 'Pin to dashboard' dialog), 'Chat in Teams', and a '...' button. Below the ribbon, there's a preview of a report titled 'Explore Restaurant Inspections (preview)'. To the left of the preview, there's a 'Data' pane with options like 'Add filter', 'Matrix', 'Sort', 'Drill', 'Visual', and 'Rearrange data'. To the right of the preview, there's a context menu with various options: 'Edit interactions' (switched off), 'Drilling filters other visuals' (switched on), 'Generate a QR code', 'Analyze in Excel', and 'Get insights'. A large central text area says 'Insert text, shapes, buttons, slicer actions and navigation'. At the bottom, there's a 'Pin to dashboard' dialog box with fields for 'Dashboard name' and 'Pin live' and 'Cancel' buttons. A note at the bottom right says '\*Copyright Maven Analytics, LLC'.



# BUILDING & FORMATTING CHARTS



The **Build** menu in the visualization pane allows you to change the visual type, import new visuals, and add data to customize chart components (*x-axis, y-axis, legend, tooltips, etc.*)

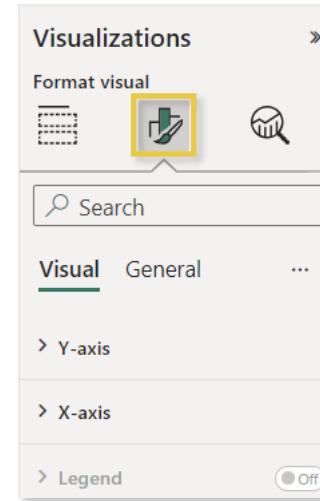
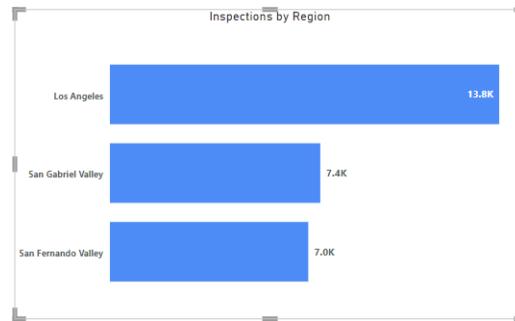
- This is a **contextual menu**, so you will only see options which are relevant to the selected visual
- You can build visuals by either inserting a specific chart type and adding data, or by dragging a field from the Data pane onto the canvas

## HEY THIS IS IMPORTANT!

Depending on where you choose to build your visuals (Power BI Desktop or Service), **your options and menu settings may vary**

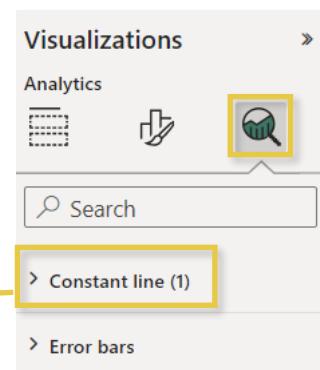
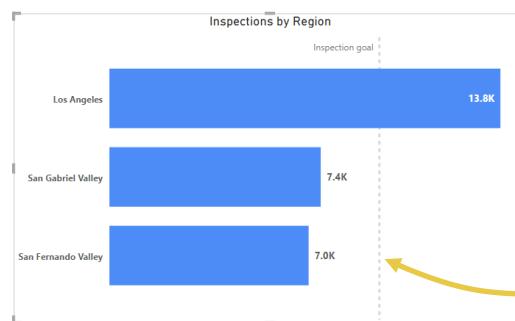


# BUILDING & FORMATTING CHARTS



The **Format** menu allows you to quickly add common chart elements (*title, axis labels, data labels, legends, etc.*) and access additional options and properties in the Format pane

- This is a **contextual menu**, so you will only see options which are relevant to the selected visual



The **Analytics** menu allow you to enhance visualizations and provide deeper insight by adding analytics features (*reference lines, forecasting, trend lines, statistical summaries, etc.*)

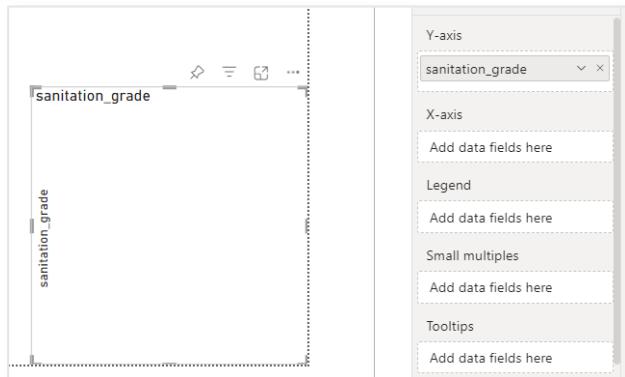
- This is a **contextual menu**, so you will only see options which are relevant to the selected visual



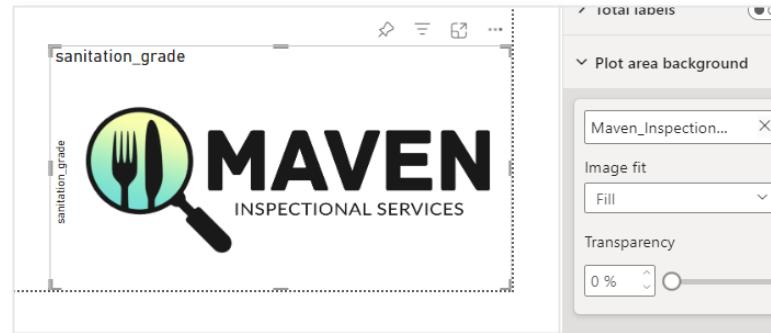
# PRO TIP: ADDING IMAGES

**Adding images** to reports is simple in Power BI Desktop, but more complicated in Service

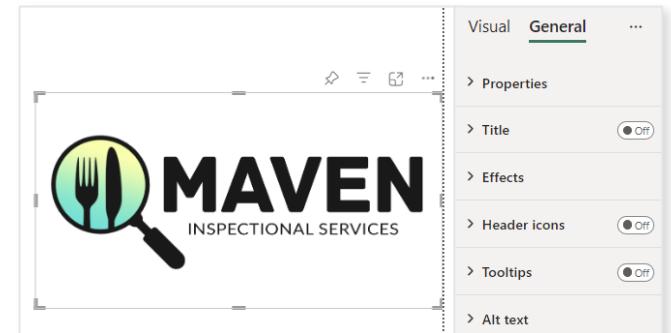
- 1** Select any **visual** with plot area (*bar, line, area, etc.*) add a dimension to the axis



- 2** Add an **image** from file to the plot area (*format pane*) and change Image Fit to "Fill"



- 3** Remove **attributes** like titles and labels, format the background and resize as needed



**PRO TIP:** If you plan to use images in your reports, **add them in Power BI Desktop first**

# ASSIGNMENT: BUILDING THE REPORT



  NEW MESSAGE

From: **Dillan Krueger (Inspector)**

Subject: **Let's build this report!**

Hey there -

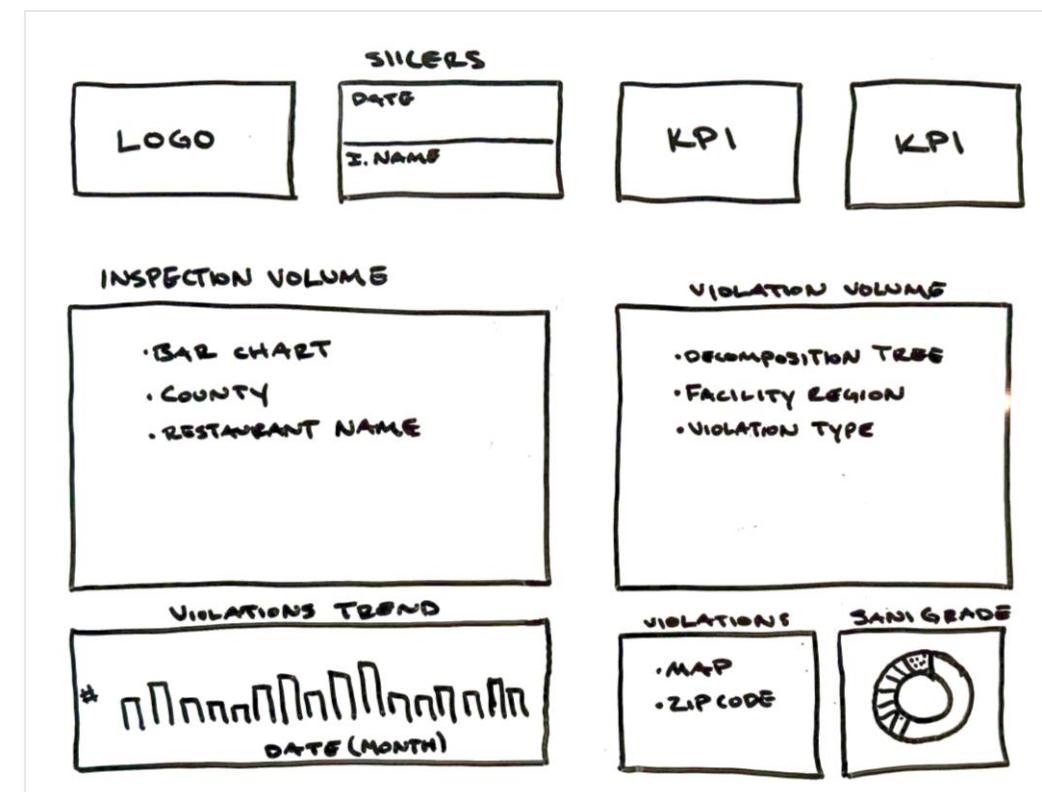
Susie let me know that you were able to build the data model and measures and publish the semantic model to Service last week – nice work!

Do you think you can build out the Restaurant Inspections report based on our whiteboard session last week (see attached), and include a second page with zip code-level detail?

Thanks!  
-Dillan

## ***Key Objectives***

1. Create a new **Inspections & Violations** report page in Service, based on the following sketch:



# ASSIGNMENT: BUILDING THE REPORT



 NEW MESSAGE

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Subject: **Let's build this report!**

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Do you think you can build out the Restaurant Inspections report based on our whiteboard session last week (see attached), and include a second page with zip code-level detail?

Thanks!  
-Dillan

 Report planning white board.png

 Reply    Forward

## Key Objectives

1. Create a new **Inspections & Violations** report page in Service, based on the following sketch:
  - **Logo, slicers** for date and inspector name, and **KPI cards** for current month inspections and avg. sanitation grade
  - **Bar chart** showing inspection volume by County, with the ability to drill down to restaurant name
  - **Decomposition tree** analyzing violations, explained by County and description, and % of violations on tooltips
  - **Column chart** showing violations by month, **Map** showing violations by zip code, and **donut chart** showing grades
2. Create a **Zip Code Detail** page and add the following:
  - **Slicer** for facility region
  - **Azure Map** with facility state zip code on Location and Number of Violations on Size
  - **Column chart** showing violations by month
3. Adjust formatting and layout as you see fit



# SOLUTION: BUILDING THE REPORT

 NEW MESSAGE

From: **Dillan Krueger (Inspector)**

Subject: **Let's build this report!**

Hey there -

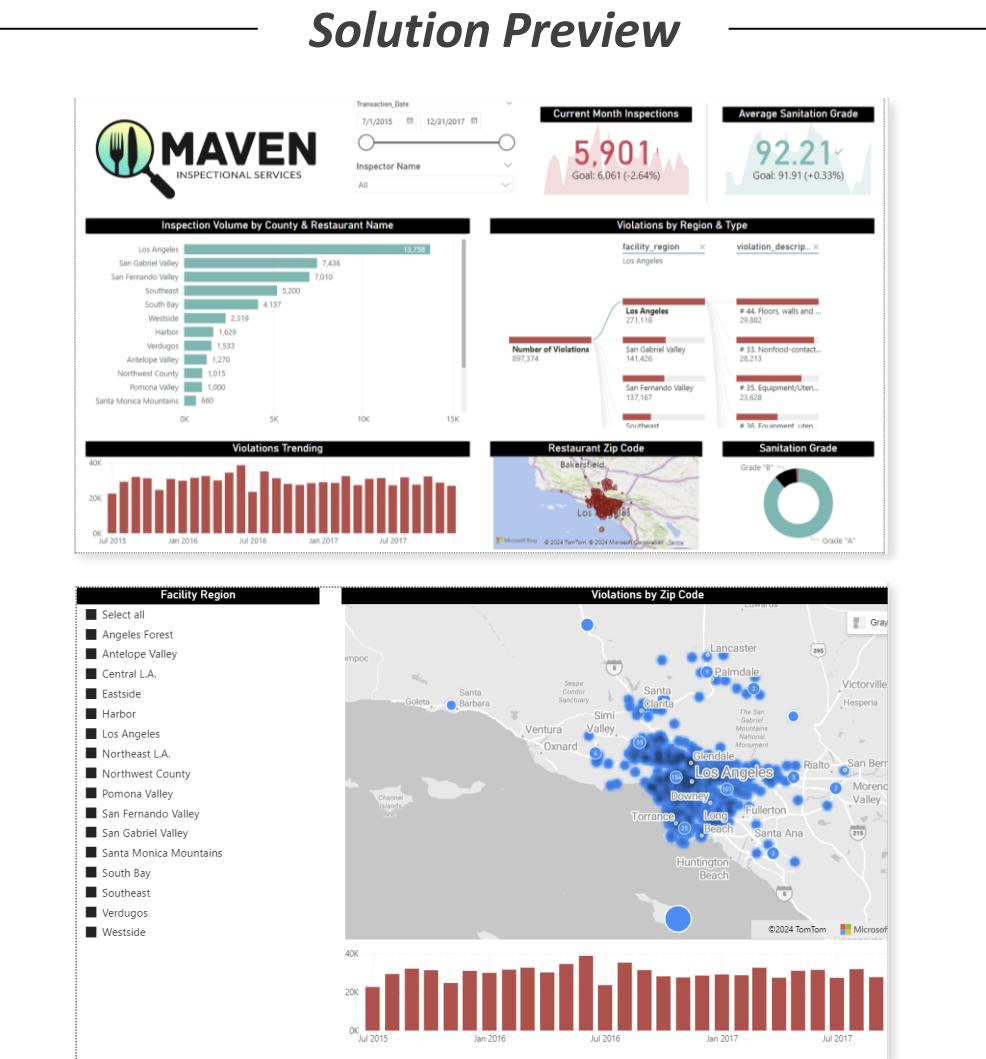
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Do you think you can build out the Restaurant Inspections report based on our whiteboard session last week (see attached), and include a second page with zip code-level detail?

Thanks!  
-Dillan

 Report planning white board.png

 Reply    Forward

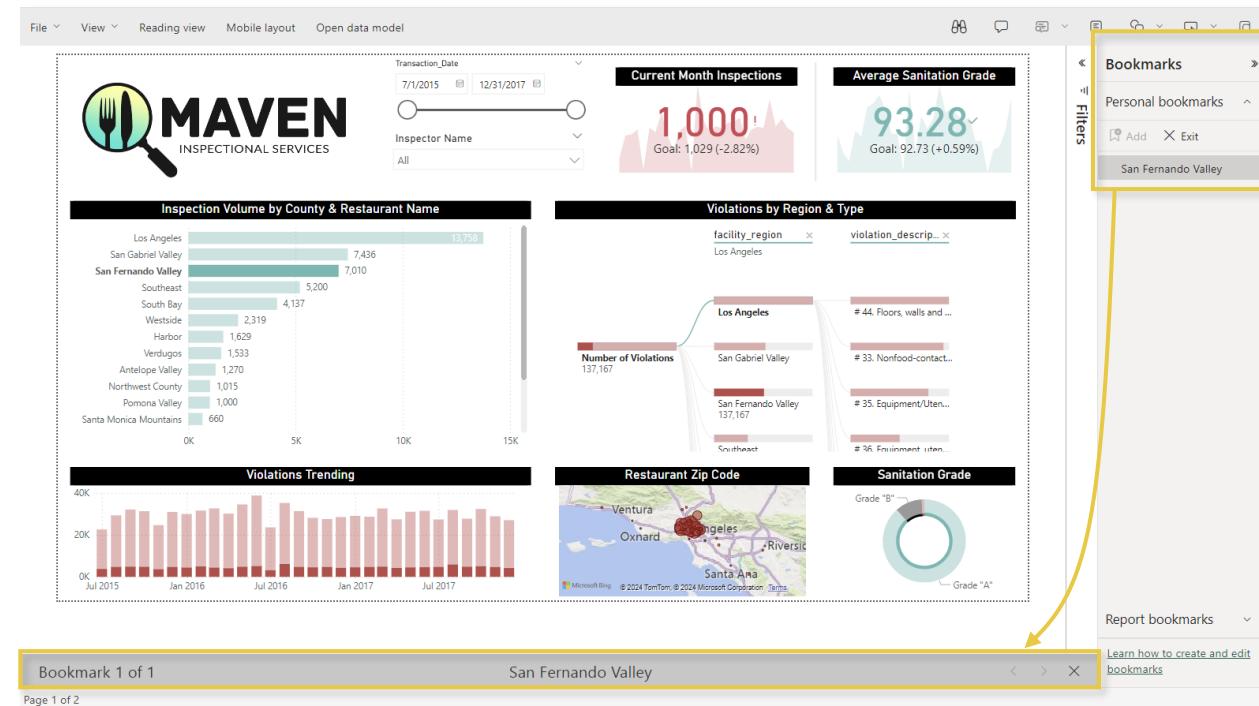
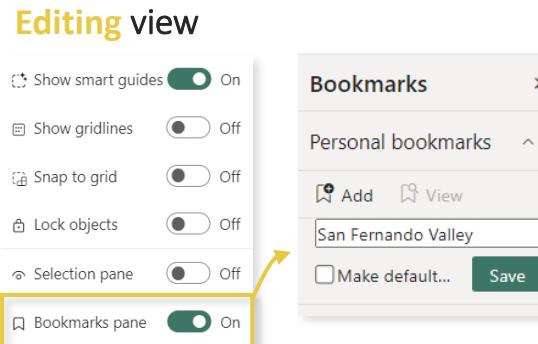
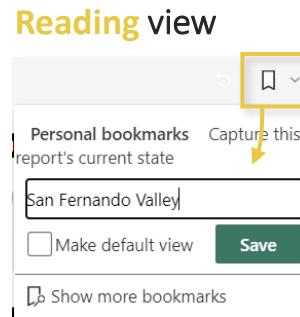




# PRO TIP: ADDING PERSONAL BOOKMARKS

**Personal bookmarks** capture static states of a visual or report page

- They work exactly like bookmarks in Power BI Desktop, except that they are accessible **only by you**
- Bookmarks can be created from the report **reading** and **editing** views





# PINNING TILES TO A DASHBOARD

**Pinning tiles** allows you to pin visuals from multiple reports into a single consolidated dashboard

Inspection Volume by County & Restaurant Name

County	Inspection Volume
Los Angeles	13,758
San Gabriel Valley	7,436
San Fernando Valley	7,010
Southeast	5,200
South Bay	4,137
Westside	2,319
Harbor	1,629
Verdugos	1,533
Antelope Valley	1,270
Northwest County	1,015
Pomona Valley	1,000
Santa Monica Mountains	660

Pin to dashboard

Select an existing dashboard or create a new one.

Where would you like to pin to?

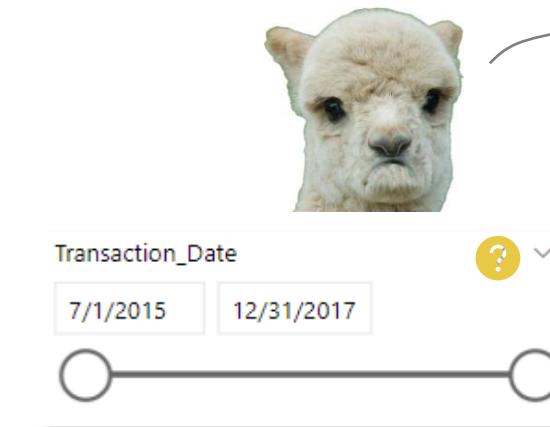
Existing dashboard

New dashboard

Dashboard name

Restaurant Inspections Dash

Pin Cancel



Why no pin??

- Annoyed llama

**HEY THIS IS IMPORTANT!**

Slicers **cannot be pinned individually to a dashboard** but can be pinned as part of a live page (*more on that soon!*)



# PINNING LIVE PAGES

Pinning a live page allows you to pin an entire report to a dashboard, rather than individual visuals

The screenshot shows a Power BI dashboard with the following components:

- MAVEN INSPECTIONAL SERVICES** logo.
- Inspection Volume by County & Restaurant Name**: Bar chart showing counts for various regions.
- Violations by Region & Type**: Treemap chart showing the number of violations by facility region and violation type.
- Average Sanitation Grade**: KPI card showing a grade of 92.21.

A context menu is open over the Violations by Region & Type chart, with the "Pin to a dashboard" option highlighted.

**Pin to dashboard** dialog box:

- Preview: Last saved state
- Select an existing dashboard or create a new one.
- Where would you like to pin to?
  - Existing dashboard (radio button selected)
  - New dashboard
- Dashboard name: Restaurant Inspections Dash
- Pin live (button)
- Cancel (button)

**PRO TIP:** Pinning a live page will **import slicers**, preserve functionality, and reflect any updates to the report



# THE DASHBOARD INTERFACE

File Share Chat in Teams Subscribe to dashboard ...

Ask a question about your data

**ASK A QUESTION**

Use natural language to generate new tiles in the dashboard

Restaurant Inspections  
INSPECTIONS & VIOLATIONS

Transaction Date  
7/1/2015 12/31/2017

Inspector Name

All

Current Month Inspections

5,901   
Goal: 6,061 (-2.64%)

Average Sanitation Grade

92.21   
Goal: 91.91 (+0.33%)

Inspection Volume by County & Restaurant Name

Los Angeles	13,758
San Gabriel Valley	7,436
San Fernando Valley	7,010
Southeast	5,200
South Bay	4,137
Westside	2,319
Harbor	1,629
Verdugos	1,533
Antelope Valley	1,270
Northwest County	1,015
Pomona Valley	1,000
Santa Monica Mountains	660

Violations by Region & Type

facility\_region violation\_descrip...

Los Angeles

Number of Violations: 897,374

Los Angeles	271,118
San Gabriel Valley	141,426
San Fernando Valley	137,167
Southeast	29,882
# 44. Floors, walls and...	28,213
# 33. Nonfood-contact...	23,628
# 35. Equipment/Utens...	...
# 36. Equipment/utens...	...

Violations Trending

Restaurant Zip Code

Sanitation Grade

**TOOLBAR**

Add new tiles, add/view comments, subscribe, share, set as featured dashboard, etc.

\*Copyright Maven Analytics, LLC



# DASHBOARD TOOLS

The diagram illustrates various tools available for managing a dashboard, organized into several panels:

- Share dashboard:** A modal window for sharing the dashboard with others. It includes a search bar, checkboxes for sharing options (Allow recipients to share this dashboard, Allow recipients to build content with the data associated with this dashboard, Send an email notification), and a message input field. Buttons for "Grant access" and "Cancel" are at the bottom.
- Comment on specific visuals:** A callout box showing a comment icon and a "Got it" button.
- See related content, Open lineage view, Open usage metrics:** A callout box with three items: a link to see related content, a link to open lineage view, and a link to open usage metrics.
- Share via Microsoft Teams:** A central hub for sharing the dashboard via Microsoft Teams. It includes icons for "File", "Share", "Chat in Teams", "Comment", "Subscribe to dashboard", "Edit", and a more options menu. Arrows point from these icons to their respective sharing options below.
- Subscriptions:** A callout box for managing dashboard subscriptions. It shows a list of subscriptions, a "Manage all" button, and a note about keeping track of data.
- Additional Tools:** A callout box containing links to "Add a tile", "Dashboard theme", and "Mobile view".
- Side Panel:** A vertical sidebar on the left with icons for "Save a copy", "Manage permissions", "Print this page", and "Settings".



# PRO TIP: EMBEDDING WEB CONTENT

The diagram illustrates the process of embedding web content into a Microsoft Power BI dashboard. It starts with the 'Edit' menu, followed by selecting 'Add a tile'. In the 'Add tile' dialog, the 'WEB CONTENT' option is chosen under the 'MEDIA' category. This leads to the 'Add web content tile' configuration window. In this window, the title is set to 'Maven Analytics'. The 'Embed code' section contains the following HTML:

```
<iframe width="100%" height="100%" src="https://www.mavenanalytics.io" frameborder="0" allowfullscreen></iframe>
```

A callout points to this code with the instruction: 'Update the URL in the code below to include your website'. Below the code, there's a note: 'Having issues viewing your content? [Learn more](#)'.

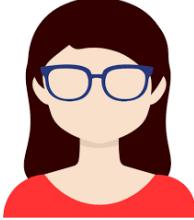
On the left, a preview of the embedded content shows the Maven Analytics homepage with the tagline 'Build Data Skills, Faster.'



**PRO TIP:** You can tweak the HTML code to customize the style of your embedded content (see *Microsoft Docs* for options)



# ASSIGNMENT: ASSEMBLING A DASHBOARD

  NEW MESSAGE

From: **Samantha Cook** (Chief Inspector)

Subject: Dashboard for the team

Hey there –

Dillan shared the report you put together, and I'm impressed!

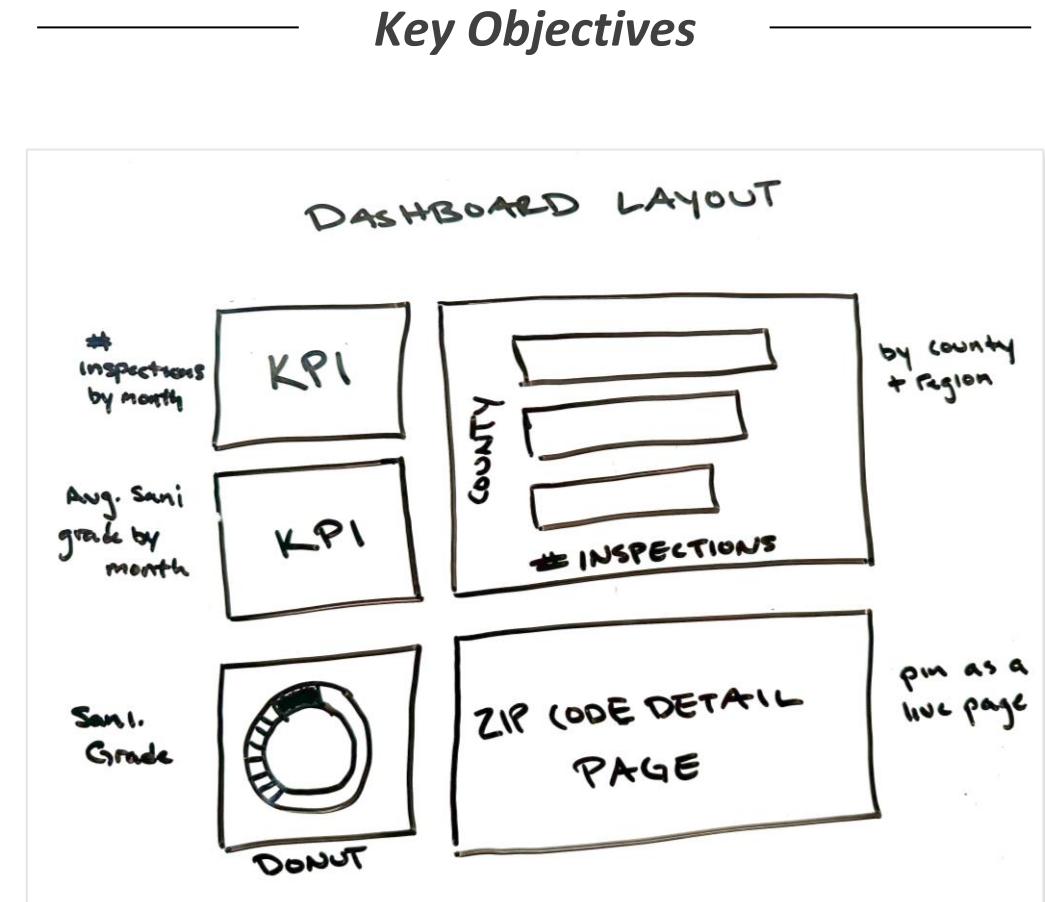
I'd love to create a single, cohesive dashboard that includes some visuals from each report page. Based on this rough sketch (*attached*), could you please take a stab at building the dashboard and share with the team when it's ready?

Cheers!

-Samantha

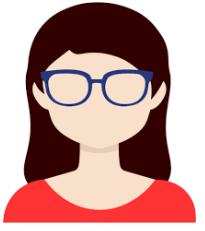
 *Dashboard layout ideas.png*

 Reply    Forward





# ASSIGNMENT: ASSEMBLING A DASHBOARD



**NEW MESSAGE**

From: **Samantha Cook (Chief Inspector)**

Subject: **Dashboard for the team**

Hey there –

Dillan shared the report you put together, and I'm impressed!

I'd love to create a single, cohesive dashboard that includes some visuals from each report page. Based on this rough sketch (*attached*), could you please take a stab at building the dashboard and share with the team when it's ready?

Cheers!

-Samantha

 *Dashboard layout ideas.png*

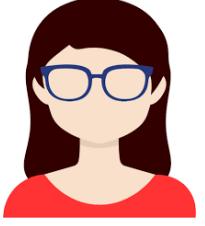
 

## Key Objectives

1. Pin the **Zip Code Detail** page as a live page to the **Restaurant Inspections** dashboard
2. Pin the following tiles to the dashboard:
  - Current Month Inspections KPI card
  - Avg. Sanitation Grade KPI card
  - Sanitation Grade donut chart
  - Inspection Volume by County bar chart
3. Arrange and resize the tiles as you see fit



# SOLUTION: ASSEMBLING A DASHBOARD

 NEW MESSAGE

From: **Samantha Cook (Chief Inspector)**

Subject: **Dashboard for the team**

Hey there –

Dillan shared the report you put together, and I'm impressed!

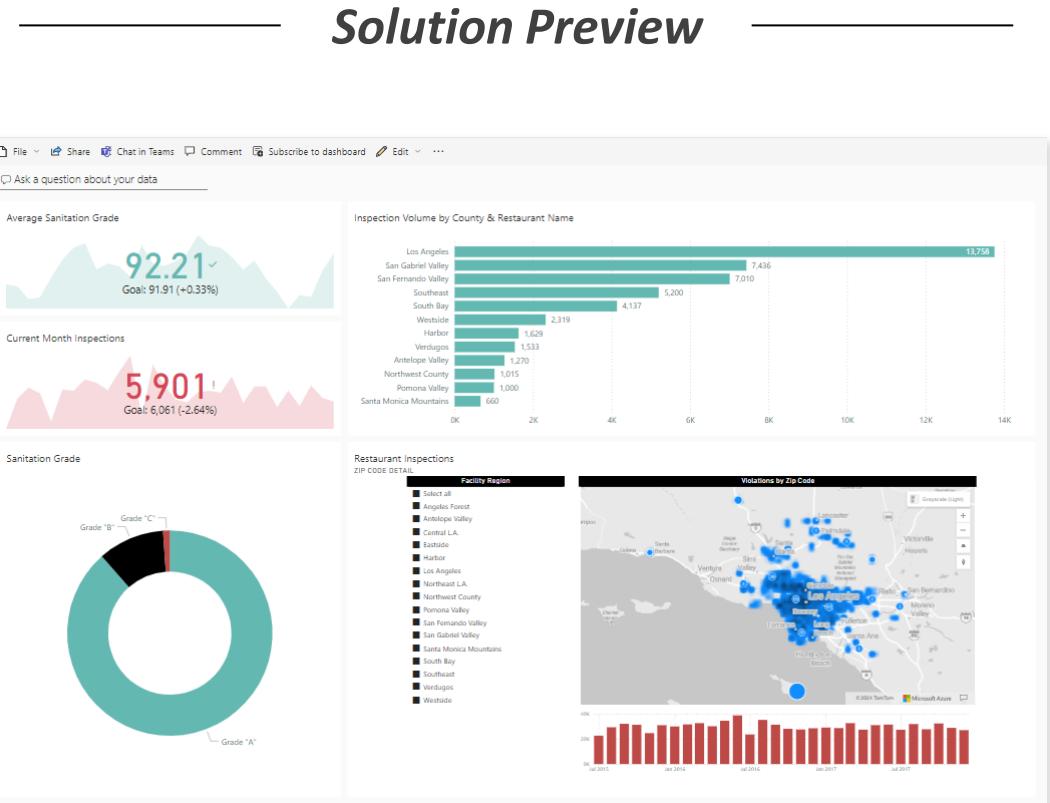
I'd love to create a single, cohesive dashboard that includes some visuals from each report page. Based on this rough sketch (*attached*), could you please take a stab at building the dashboard and share with the team when it's ready?

Cheers!

-Samantha

 Dashboard layout ideas.png

Reply Forward





# DATA-DRIVEN ALERTS

**Data-driven alerts** can be used to notify you when a metric reaches a designated threshold

To add a new alert, click the ellipsis next to a dashboard tile and select **Manage alerts**

Current Month Inspections  
5,901!  
Goal: 6,061 (-2.64%)

HEY THIS IS IMPORTANT!

Alerts can ONLY be configured with **gauge charts**, **KPI cards** or **cards**, and do not work with live pinned report pages

- ⋮ Add a comment
- Chat in Teams
- Copy visual as image
- Go to report
- Open in focus mode
- Manage alerts**
- Export to .csv
- Edit details
- View insights
- Pin tile
- Delete tile

**Create** and **configure** your alert with a name, condition threshold, and notification cadence

AVERAGE SANITATION GRADE  
Manage alerts

+ Add alert rule

Average Sanitation Grade  
Active  
On

Alert title  
Average Sanitation Grade

Set alerts rule for  
Average Sanitary Grade

Condition	Threshold
Below	90

Maximum notification frequency  
 At most every 24 hours  
 At most once an hour

Alerts are only sent if your data changes.

By default, you'll receive notifications on the service in the notification center.  
 Send me email, too

Use Power Automate to trigger additional actions

**Save and close** **Cancel**

- >Create a new alert
- Activate and name the new alert
- Set condition, threshold, and notification frequency
- Save and close



# ASSIGNMENT: ADDING ALERTS



**NEW MESSAGE**

From: **Brent Finnegan (Inspector)**

Subject: **Can we set up some alerts?**

Hey there –

I've been chatting with some of the other inspectors, and it would be great if we could set up a notification to alert us when the average sanitation grade drops below 92.

I'd also love to set up an alert to notify us if we exceed 6,500 inspections in a month, so that we can think about expanding our crew.

Thank you!  
-Brent

**Reply**    **Forward**

## ***Key Objectives***

1. Create a new data-driven alert on the Average Sanitation Grade KPI card
  - Add an alert title, set the condition, and choose a frequency of “at most every 24 hours”
2. Create a second alert to notify the team when monthly inspections exceed 6,500
  - Add an alert title, set the condition, and choose a frequency of “at most every 24 hours”



# SOLUTION: ADDING ALERTS



**NEW MESSAGE**

From: **Brent Finnegan (Inspector)**

Subject: **Can we set up some alerts?**

Hey there –

I've been chatting with some of the other inspectors, and it would be great if we could set up a notification to alert us when the average sanitation grade drops below 92.

I'd also love to set up an alert to notify us if we exceed 6,500 inspections in a month, so that we can think about expanding our crew.

Thank you!

-Brent

**Reply**    **Forward**

## *Solution Preview*

**AVERAGE SANITATION GRADE**  
**Manage alerts**

**+ Add alert rule**

^ Average Sanitation Grade below 92 ✖  
Active  On

**Alert title**  
Average Sanitation Grade below 92

**Set alerts rule for**  
Average Sanitary Grade

**Condition**  **Threshold**

**Maximum notification frequency**  
 At most every 24 hours  
 At most once an hour

Alerts are only sent if your data changes.

By default, you'll receive notifications on the service in the notification center.

Send me email, too

**CURRENT MONTH INSPECTIONS**  
**Manage alerts**

**+ Add alert rule**

^ Exceeded 6500 Inspections ✖  
Active  On

**Alert title**  
Exceeded 6500 Inspections

**Set alerts rule for**  
Number of Inspections

**Condition**  **Threshold**

**Maximum notification frequency**  
 At most every 24 hours  
 At most once an hour

Alerts are only sent if your data changes.

By default, you'll receive notifications on the service in the notification center.

Send me email, too



# NATURAL LANGUAGE Q&A

Natural language Q&A allows you to explore and visualize your data using text prompts



*I wonder which 10 restaurants have the most violations?*

- Man with question



**Pin visual**

Filters

Visualizations

Current Month Inspections

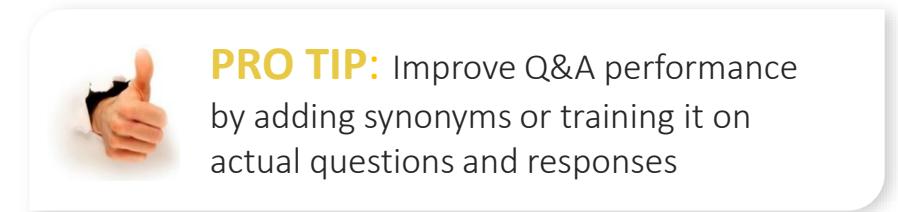
Average Sanitation Grade

Inspection Volume by County & Restaurant Name

Number of Violations BY FACILITY\_NAME



You can even pin Q&A visuals straight to the dashboard!





# QUICK INSIGHTS

**Quick insights** automatically searches for trends and patterns in your semantic model to produce AI-generated insights and visuals (up to 32 cards)

The screenshot shows the Power BI workspace interface. A context menu is open over a dataset named "Restaurant Inspections". The "Quick insights" option is highlighted with a yellow box and a yellow arrow points from it to a callout box. The callout box contains the text: "✓ Insights are ready You have insights for Restaurant Inspections." with a "View insights" button, also highlighted with a yellow box.

**HEY THIS IS IMPORTANT!**

Quick insights aren't available for reports or dashboards using **Roles** (RLS) or **Direct Query**

**Quick Insights for Restaurant Inspections**

A subset of your data was analyzed and the following insights were found. [Learn more](#)

**Count of City Lookup and Average of score BY TRANSACTION\_DATE**

The chart displays a scatter plot where the x-axis is "Count of City Lookup" and the y-axis is "Average of score". The data points are clustered into several groups, primarily between 0 and 100 on both axes. A few outliers are visible at lower average scores and higher counts of city lookups.

City Lookup and score form clusters when grouped by Transaction\_Date except for Sunday, May 21, 2017, Friday, September 1, 2017, and Saturday, October 28, 2017.



# MOBILE LAYOUT

**Mobile layout** allows you to design reports that are optimized for the Power BI mobile app

- You cannot **build** content within the Mobile Layout view; you need to build in **Web Layout** and assemble select visuals to share via the Power BI mobile app

The screenshot illustrates the process of creating a mobile layout. On the left, the 'Web Layout' tab is selected, displaying a dashboard with various visualizations including a bar chart, a map, and a donut chart. On the right, the 'Mobile Layout' tab is selected, showing a mobile phone icon and a 'Create mobile layout' button. A large bracket spans both tabs, indicating the transition between them.



# POWER BI MOBILE APP

**Power BI's mobile app** allows you interact, view, share, comment, and collaborate on the go

## ✓ **Interact, explore & view** dashboard or reports

- Interact with report visuals and filters, or use Q&A features to discover new insights

## ✓ **Share** dashboards or reports from your phone

- Share links to workspace reports and dashboards to anyone else with a Pro account

## ✓ **Draw & comment** anywhere on your screen

- Add annotations that you can share with your team using text, drawings, icons and more

## ✓ **Notify users & set alerts** when metrics change

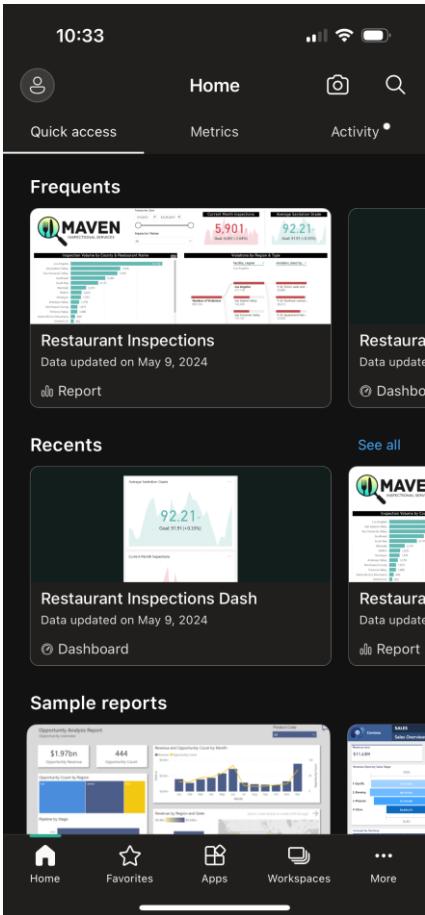
- Get notifications based on any alerts you've configured, or when you've been @mentioned



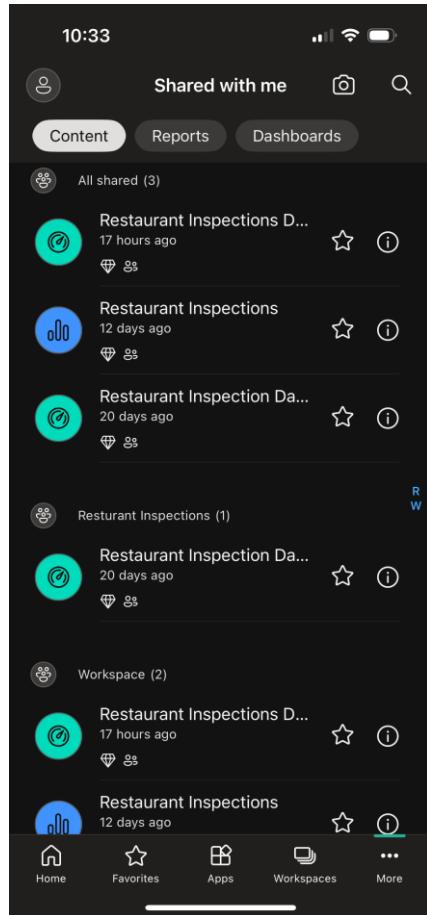


# APP FUNCTIONALITY

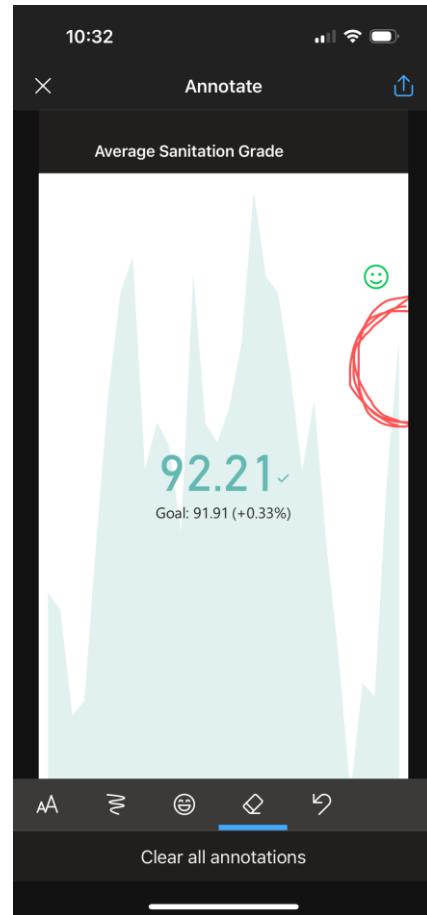
## INTERACT



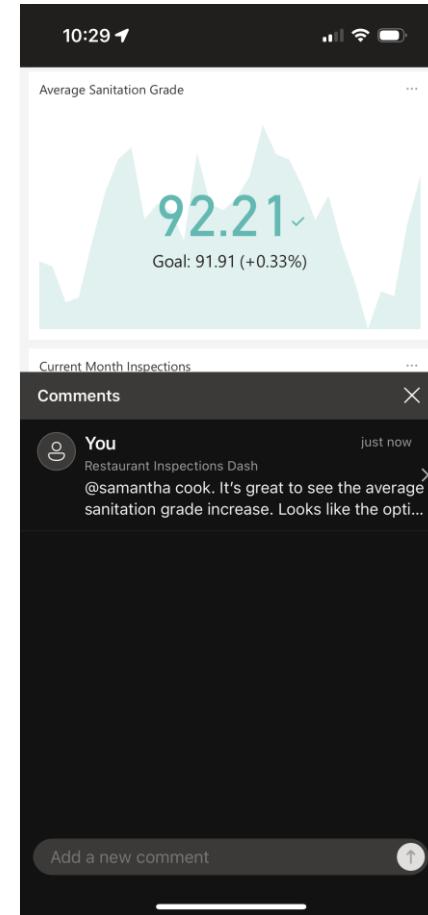
## SHARE



## DRAW



## NOTIFY



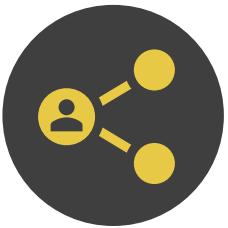


## KEY TAKEAWAYS

- ★ You can create and format new **visuals** and **reports** in Power BI Service, and assemble (or pin) them into centralized **dashboards**
- ★ **Data-driven alerts** allow you to send notifications when key metrics reach a designated threshold
- ★ **Natural language Q&A** and **Quick Insights** tools allow you to explore your data and create AI-generated insights and visuals
- ★ The **mobile layout** view allows you to reorganize report tiles to optimize for viewing on the Power BI mobile app

# SHARING & COLLABORATION

# SHARING & COLLABORATION



In this section we'll cover the **sharing** and **collaboration** options in Power BI Service, including publishing apps, publishing to web and monitoring usage reports

## TOPICS WE'LL COVER

Sharing & Viewing

Sharing Workspaces

Publishing Apps

Publishing to Web

Usage Reports

## GOALS FOR THIS SECTION

- *Share reports and dashboards to collaborate with other users in Power BI Service*
- *Distribute published apps across an organization*
- *Learn how to publish public content to the web*
- *Review tools and reports to monitor how reports in Service are being used*



# SHARING OPTIONS

## 1 Print or Export a Report

Ideal for quickly exporting reports or dashboards as **static PDFs** or **PowerPoint** documents (great for handouts!)

## 2 Share Reports or Dashboards

Best for **sharing individual pieces of content**, especially when recipients only need to view and interact with content (not edit)

## 3 Share a Workspace

Easiest way to **collaborate with a team** by sharing ownership and management of all content (datasets, reports, dashboards, etc.)

## 4 Publish an App

Great for **distributing content to large groups** or teams, and for publishing specific sets of datasets, reports or dashboards

## 5 Embed Securely Online

Used for **securely embedding content to a website you own** through SharePoint Online, via URL, or iframe

## 6 Publish to Web

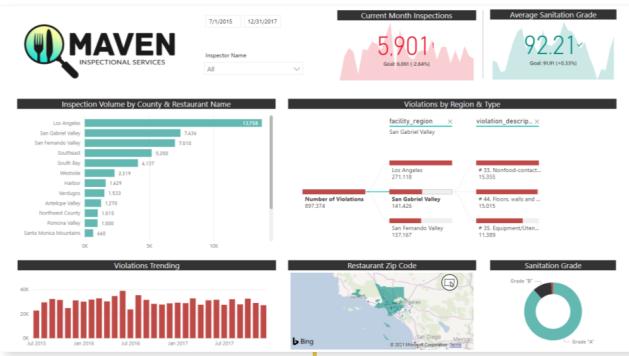
Only use the Publish to Web option if you want your content to be **publicly visible to anyone online** (use with caution!)



# SHARING OPTIONS



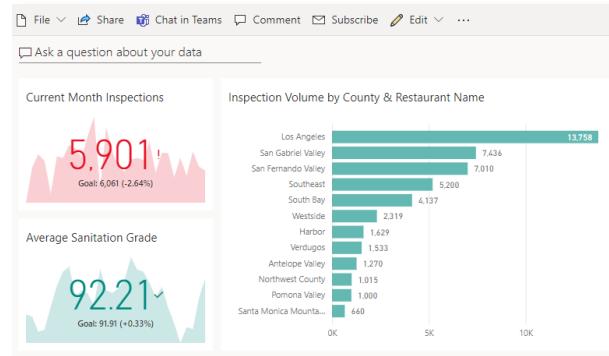
## Reports



INDIVIDUALS



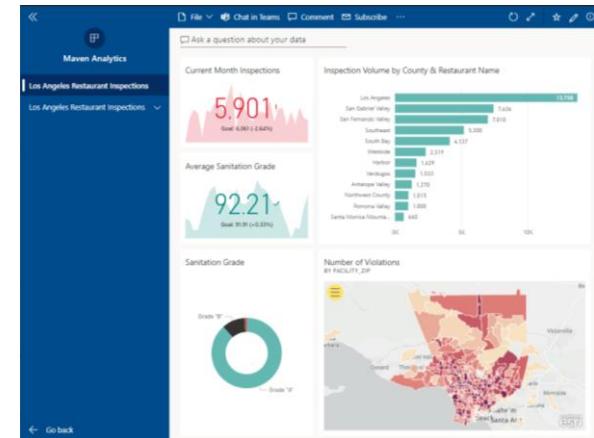
## Dashboards



TEAMS



## Apps



ORGANIZATIONS

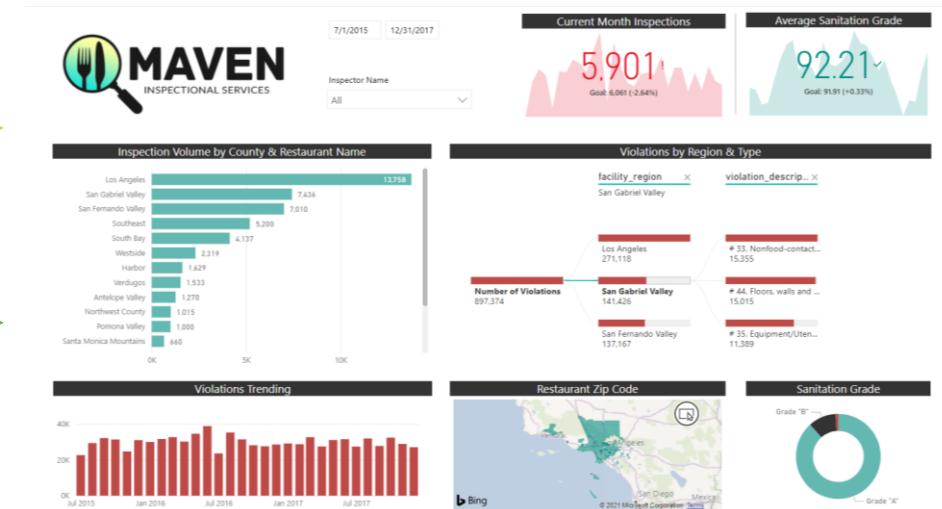
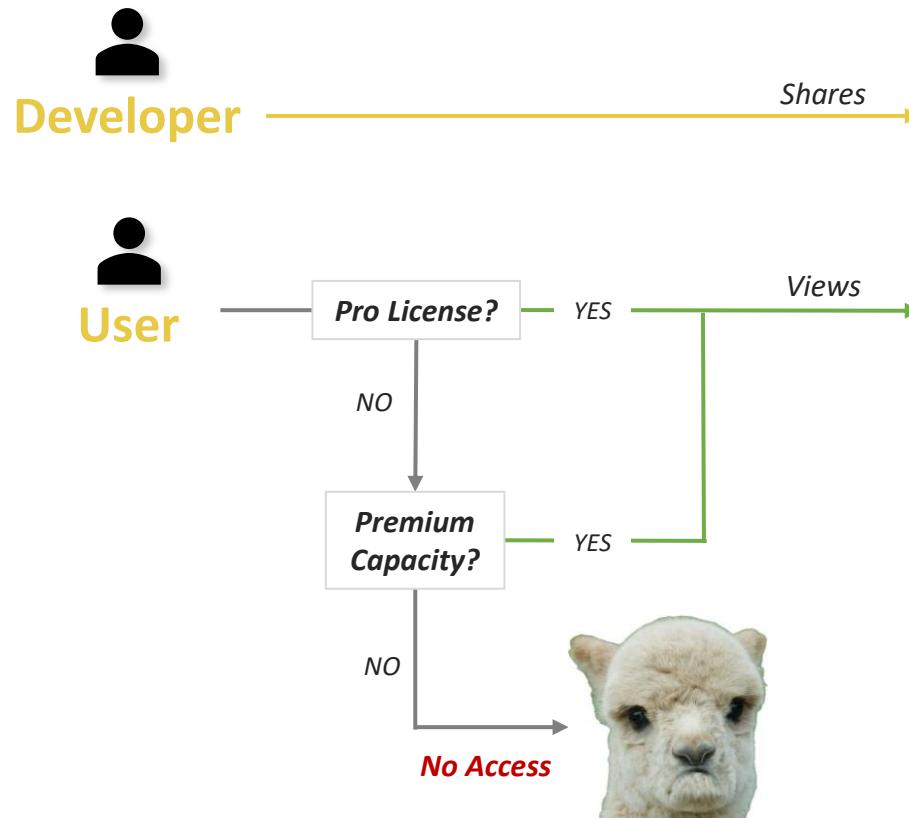


**PRO TIP:** When sharing reports & dashboards, the maximum number of recipients is **100** at a time (or **500** total); if you need to share with more than 100 recipients, split into multiple sends or user groups



# VIEWING RIGHTS

When a developer shares a report or dashboard or publishes an app, users must have either a **paid license (Pro or PPU)** or **access to a premium capacity (Premium, Fabric)** to view the content



## HEY THIS IS IMPORTANT!

Users with Pro licenses can share content with PPU users, but not the other way around



# USER ROLES & PERMISSIONS

**Workspace user roles** let you assign permissions to customize how your team can collaborate

## VIEWER

- “Read-only” access level
- View workbooks, reports, and dashboards
- Can’t access datasets, dataflows, or edit content
- Used when implementing row-level security roles

## CONTRIBUTOR

- Publish, create, edit, and delete content
- Can’t add people to new roles or modify members
- Can share if the content has been previously shared but can’t share new content

## MEMBER

- All Contributor rights, plus:***
- Add members or users with lower permission levels
  - Publish and update apps
  - Share an item or app
  - Allow others to reshare

## ADMIN

- All Member rights, plus:***
- Update/delete workspaces
  - Add or remove other users (including admins)



# PUBLISHING APPS

You can **publish reports or dashboards as apps** to allow large groups of people (both internal and external to your organization) to access them

Create app from within a workspace:

The screenshot shows a 'Workspace' interface with a sidebar containing items like 'Fuzzy Factory', 'Dataflow 1', 'Inspection Services', 'Restaurant Inspections', 'Restaurant Inspections', 'Restaurant Inspections', and 'Restaurant Inspections Dash'. A yellow box highlights the 'Create app' button in the top right corner of the workspace header. An arrow points from this button to the 'Create app' dialog window.

## 1 SETUP

The 'Setup' tab is active. It includes fields for 'App name\*' (Restaurant Inspections), 'Description\*' (Inspector-level KPIs), 'App logo' (a blue square icon), and 'App theme color' (a blue square). The 'Content' and 'Audience' tabs are also visible at the top.

In the **Setup** tab, name the app, add a description, logo, and color theme

## 2 CONTENT

The 'Content' tab is active. It lists 'Restaurant Inspections' and 'Restaurant Inspection Data.csv'. There is a '+ Add content' button with a dropdown arrow. The 'Setup' and 'Audience' tabs are also visible at the top.

In the **Content** tab, add new content from your workspace and set the navigation order

## 3 AUDIENCE

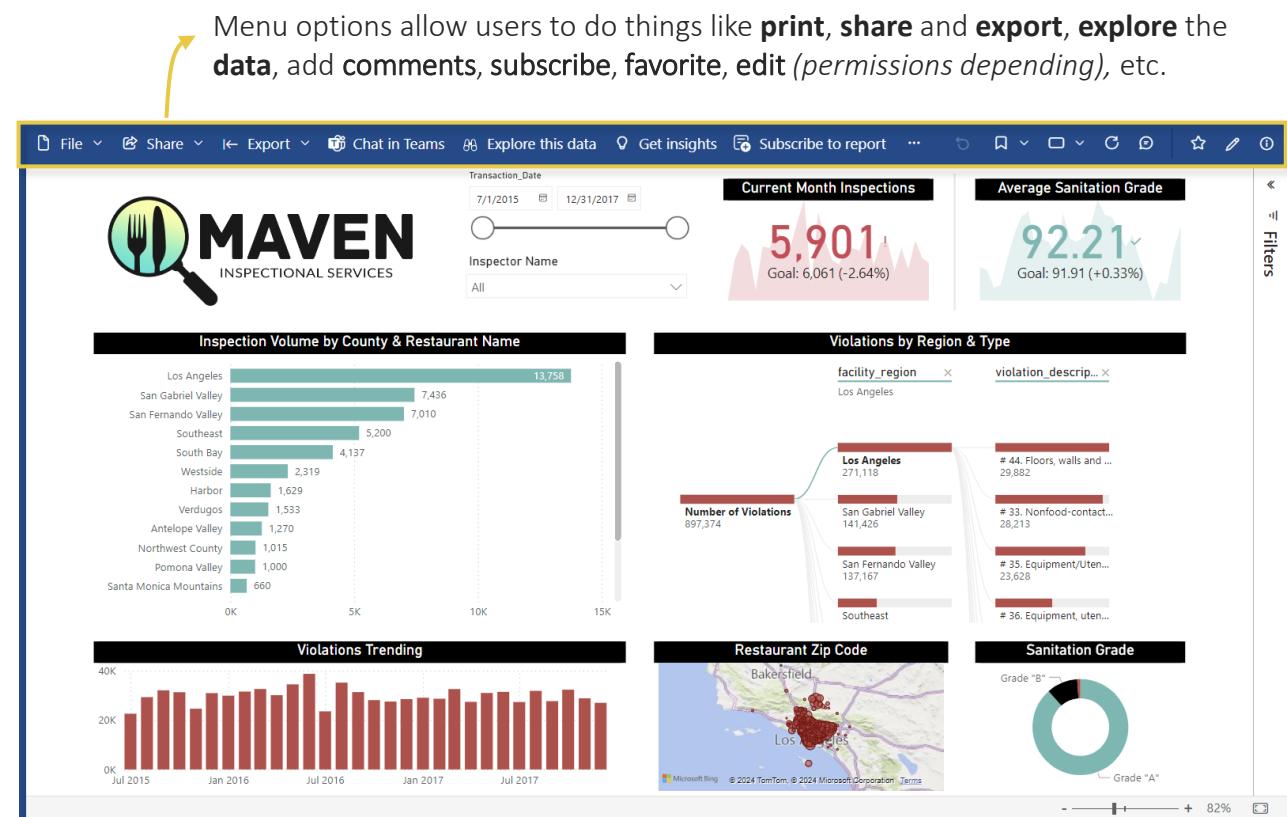
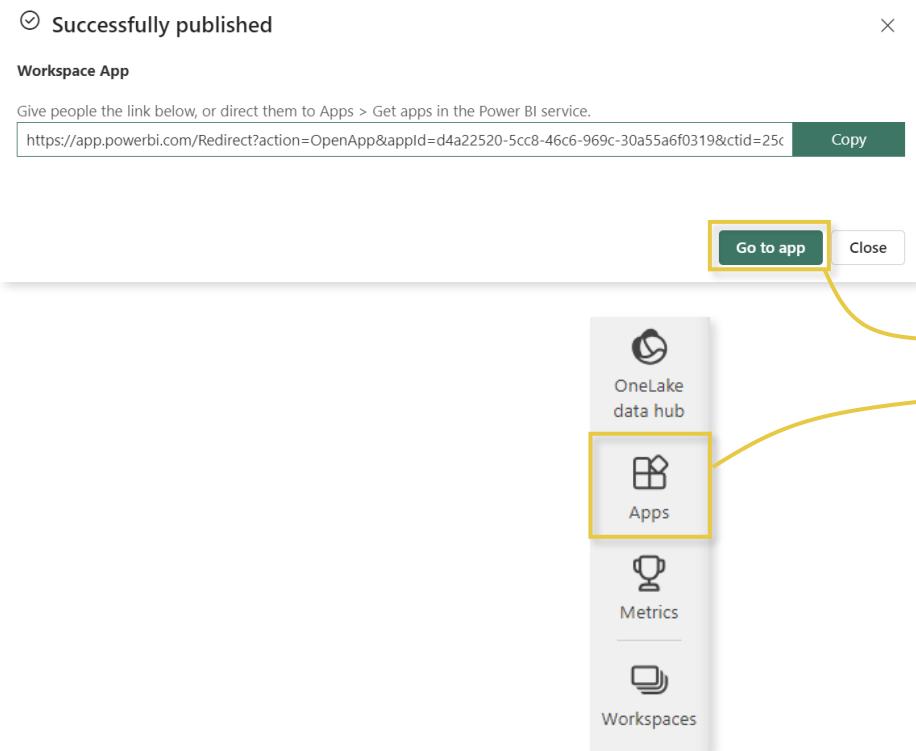
The 'Audience' tab is active. It shows 'Restaurant Inspections' with an 'Edit Audience' button. It also has sections for 'Grant access to' (Entire organization, Specific users or groups, Enter a name or email address), 'Advanced', and 'Workspace users'. The 'Setup' and 'Content' tabs are also visible at the top.

In the **Audience** tab, add individuals, groups, or entire organizations to the App



# PUBLISHING APPS

After **publishing an app**, it can be accessed from the main navigation pane or via direct link





# PUBLISHING TO WEB

**Publish to Web** allows you to host reports online for public access

## Embed in a public website

Get a link or embed code that you can include on a public website.

You may use the publish to web functionality to share content on a publicly available website. You may not use this functionality to share content internally, including through email, your internal network, or intranet site.

Publish a live version that will remain synchronized with the source report in Power BI. Any changes you make to the report will immediately be reflected in the published public version.

Continue

Close

Success! Your report is ready to share

Link you can send in email

<https://app.powerbi.com/view?r=eyJrIjoiY2QzVw>

Copy

HTML you can paste into a website

<iframe title="Restaurant Inspections" width="6

Copy

Size

600 x 373.5 px

Placeholder image



Default Page

Default

## Embed in a public website

You are about to create an embed code for this report. Once published, anyone on the internet will be able to access:

- This report: Restaurant Inspections
- Semantic model: Restaurant Inspections

⚠ Do not publish confidential or proprietary information, or an individual's personal data.

Before you continue, ensure you have the right to share the data and visualizations publicly. If in doubt, check your organization's policies. Microsoft may display the report on a public website or public gallery.

Publish

Close

← Pay Attention to this Warning!

You are about to make the report **100% accessible to anyone on the internet**



## Workspace

Associated Report ↑	Status	Date Created
Restaurant Inspections	Active	5/9/2024, 1:12:13 PM



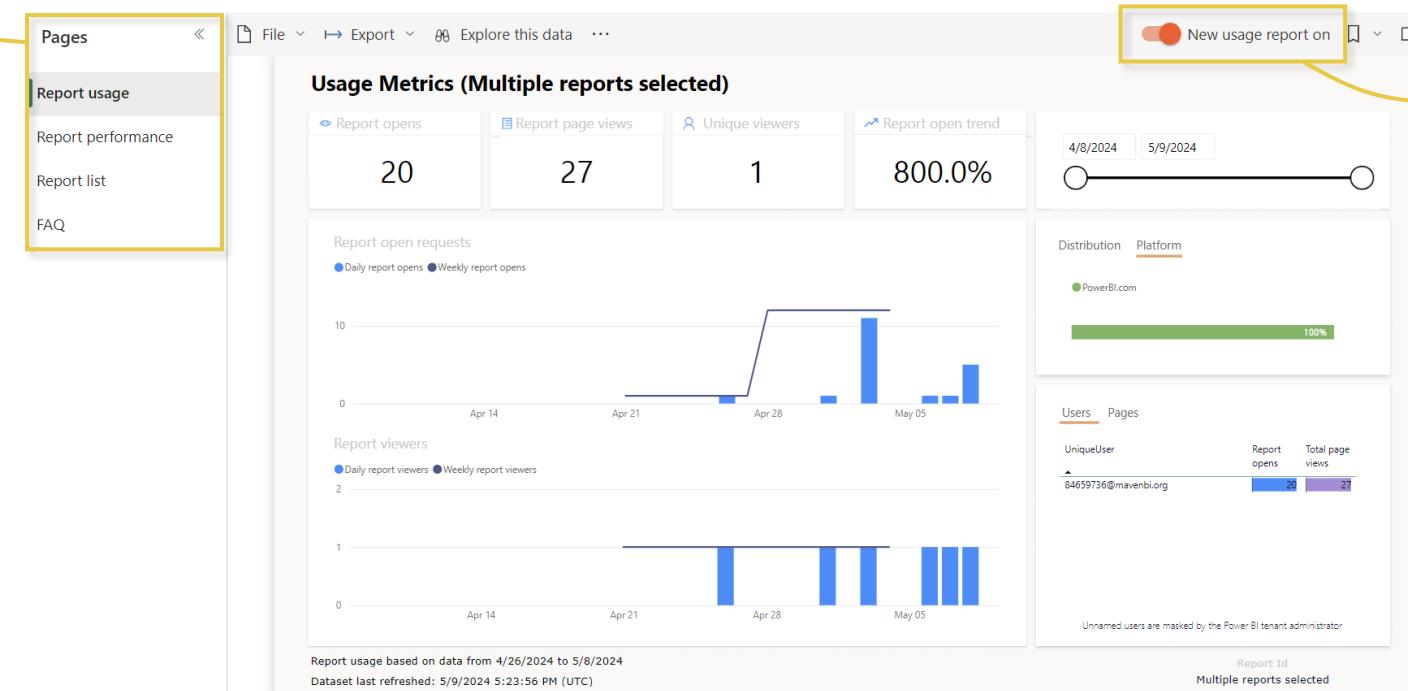
Head to **Settings > manage embed codes** to manage & delete Publish to Web embed codes



# PRO TIP: USAGE METRICS REPORTS

**Usage metrics reports** monitor how your dashboards and reports are being used

- **REPORT USAGE**  
*Displays metrics like opens, views, viewers, users, etc.*
- **REPORT PERFORMANCE**  
*Displays typical open time, browser, device, etc.*
- **REPORT LIST**  
*Shows key metrics by report across the entire workspace*
- **FAQ**  
*Terms and calculation definitions, links to additional info, etc.*



**PRO TIP:** Choose “Save report as” from the file menu to access the underlying data and build a custom report



# ASSIGNMENT: SHARING & COLLABORATION



**1** NEW MESSAGE

From: **Brent Finnegan (Inspector)**

Subject: **Interactive Power Point slides**

Hey there –

Need some help prepping for a meeting next week. Not everyone has access to our Power BI reports, so I'm hoping you can share an interactive version of the Restaurant Inspections report via Power Point.

Thank you!  
-Brent

**Reply**    **Forward**

## *Key Objectives*

1. Export the **Restaurant Inspections** report to Power Point using the “embed live data” option
  - Add both report pages (**Inspections & Violations** and **Zip Code Detail**) to the presentation
  - What do you notice about the Zip Code Detail page?



# SOLUTION: SHARING & COLLABORATION

  **NEW MESSAGE**

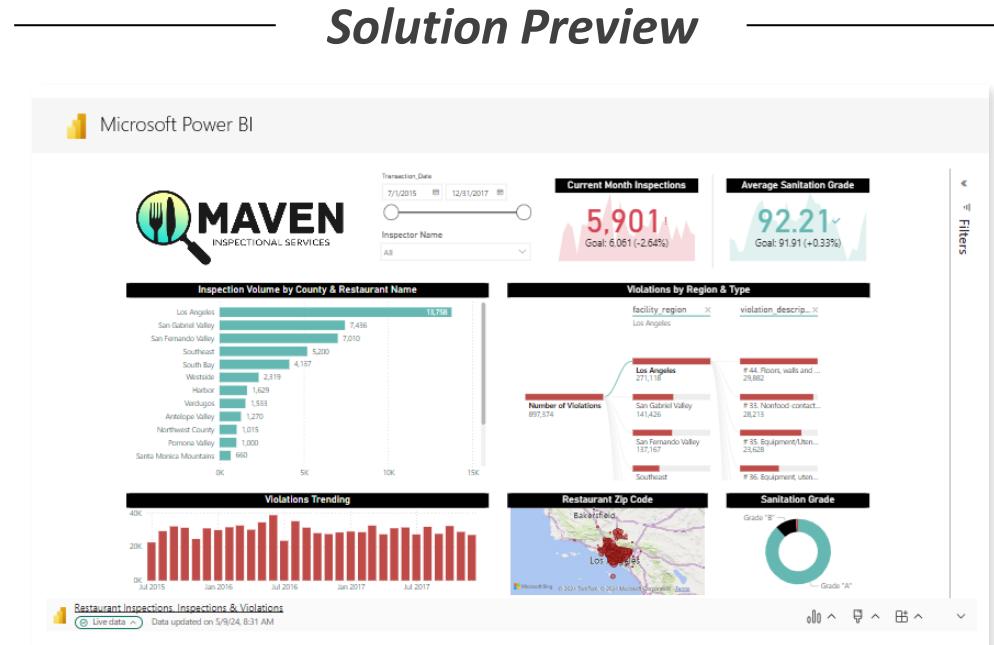
From: Brent Finnegan (Inspector)  
Subject: Interactive Power Point slides

Hey there –

Need some help prepping for a meeting next week. Not everyone has access to our Power BI reports, so I'm hoping you can share an interactive version of the Restaurant Inspections report via Power Point.

Thank you!  
-Brent

**Reply** **Forward**





## KEY TAKEAWAYS

---

- ★ **Sharing workspaces** allows you to collaborate with team members and assign user-level roles and permissions
- ★ **Publishing an app** is the best way to distribute content to large audiences, both within and external to your organization
- ★ **Publishing to web** allows you to share non-sensitive reports or dashboards with the general public
- ★ **Usage metrics reports** provide metrics to help you monitor report consumption and see how they are being used

# ROW-LEVEL SECURITY

# ROW-LEVEL SECURITY



In this section we'll cover **roles** and **row-level security (RLS)**, which are used to restrict data access to users at the row level and limit what they're able to view

## TOPICS WE'LL COVER

Static RLS

Dynamic RLS

RLS in Service

## GOALS FOR THIS SECTION

- *Create static roles to filter data based on an individual's role or responsibilities*
- *Dynamically create roles for your organization with the USERPRINCIPALNAME function*
- *Learn how to apply roles in the service to configure what content users can and cannot access*



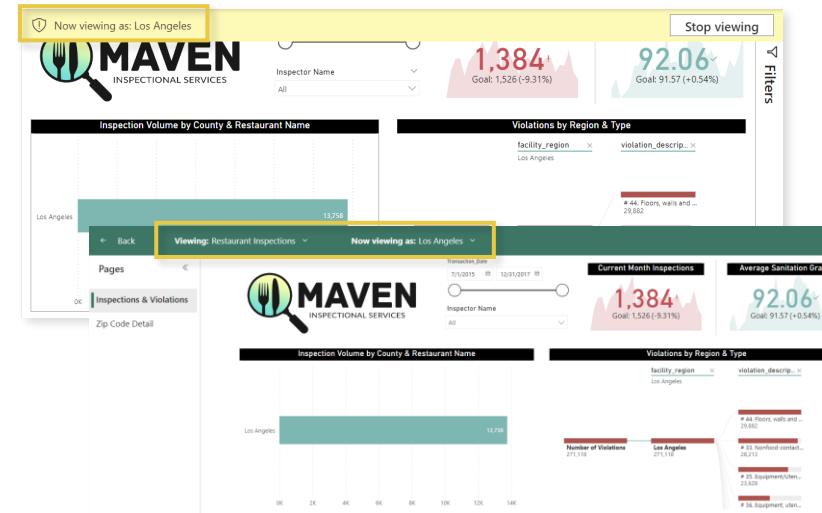
# ROW-LEVEL SECURITY

**Row-level security (RLS)** allows you to control who can see specific data within a report, based on rules that you configure for individual users or groups

## 1 CREATE

The screenshot shows the Power BI Data Model view with two filter dialogs open. The top dialog is for the 'Region Lookup' table, filtering by 'facility\_region = "Los Angeles"'. The bottom dialog is for the 'Inspector Lookups' table, filtering by 'email\_address = USERPRINCIPALNAME()'. Both filters are highlighted with yellow boxes.

## 2 TEST



## 3 DEPLOY

The screenshot shows the 'Row-Level Security' settings in the Power BI service. It lists a role named 'Los Angeles (1)' with one member, 'Aaron'. A yellow box highlights the 'Members (1)' section where Aaron is listed. Other options like 'Delete', 'Quick insights', 'Rename', 'Open data model', 'Settings', and 'Download this file' are also shown.



**PRO TIP:** Object-level security is possible (i.e. filtering columns or tables) but requires 3<sup>rd</sup> party tools like Tabular Editor



# STATIC ROW-LEVEL SECURITY

**Static roles** allow you to define filtered views for specific audiences using simple DAX statements

- This is not the same as creating a bookmark or pre-filtered view; roles **filter data out of your model** to limit the information that certain audiences can access
- Static roles can be built in Power BI Desktop or Service, **but can only be implemented within Power BI Service**

**HEY THIS IS IMPORTANT!**

DAX expressions used to define roles **must use expressions that filter rows**, and cannot reference a column, table or measure alone

Manage security roles

Create new security roles and use filters to define row-level data restrictions.

Roles

+ New

Select tables

Los Angeles

Filter data

1 [facility\_region] = "Los Angeles"

Switch to default editor

Calendar Look...  
City Lookup  
Inspector Look...  
Measures Table  
Region Lookup  
Restaurant Ins...  
Restaurnat Na...  
Sanitary Grade...

Filter data

1 [facility\_region] = "Los Angeles"

Filter the data that this role can see by entering a DAX filter expression that returns a True/False value. For example: [Entity ID] = "Value"



# VIEWING AS ROLES

**View as roles** allows you to test row-level security settings and confirm that data is filtering properly before publishing to Power BI Service

The screenshot illustrates the 'View as roles' feature in Power BI. At the top, the ribbon shows the 'Modeling' tab is selected. In the 'Help' section, there is a 'View as' dropdown menu with options: 'Manage roles', 'View as', and 'Security'. The 'View as' option is highlighted with a yellow box and has a yellow arrow pointing to a modal dialog box titled 'View as roles'. This dialog box contains three checkboxes: 'None', 'Other user', and 'Los Angeles', with 'Los Angeles' checked and also highlighted with a yellow box. A second yellow arrow points from this checked box to the main Power BI report view. The report view shows a dashboard for 'MAVEN INSPECTIONAL SERVICES' with various visualizations. At the top, it says 'Now viewing as: Los Angeles'. It includes a chart for 'Inspection Volume by County & Restaurant Name' and a chart for 'Violations by Region & Type'. The 'Violations by Region & Type' chart is specifically for the 'Los Angeles' region, showing details like 'Number of Violations' (271,118), 'facility\_region' (Los Angeles), and violation descriptions such as 'Floors, walls and ...' (29,682), 'Nonfood-contact...' (28,213), 'Equipment/Utensil...' (23,628), and 'Equipment, uten...' (23,628). A 'Filters' button is visible on the right side of the report view.



# DYNAMIC ROW-LEVEL SECURITY

You can create **dynamic roles** for specific lists of users with the DAX function **USERPRINCIPALNAME**

- This DAX function requires you to add an additional table into your data model
- Dynamic roles can be built in Power BI Desktop or Service, **but can only be implemented within Power BI Service**

File Home Insert Modeling View Optimize Help External tools

Manage relationships New measure Calculations New measure column New table Change detection Page refresh New parameter Parameters Q&A L setup

Roles + New

Select tables

Filter data

Switch to default editor ✓ ✕

1 [email\_address] = USERPRINCIPALNAME()

Filter the data that this role can see by entering a DAX filter expression that returns a True/False value. For example: [Entity ID] = "Value"

email_address	inspector_role
bfinnegan@maveninspectionalservices.onmicrosoft.com	Inspector
dkrueger@maveninspectionalservices.onmicrosoft.com	Inspector
kmeza@maveninspectionalservices.onmicrosoft.com	Inspector
jkay@maveninspectionalservices.onmicrosoft.com	Inspector
bblanco@maveninspectionalservices.onmicrosoft.com	Inspector
dschmitt@maveninspectionalservices.onmicrosoft.com	Lead Inspector
jstubbs@maveninspectionalservices.onmicrosoft.com	Inspector
rriggs@maveninspectionalservices.onmicrosoft.com	Inspector
dgently@maveninspectionalservices.onmicrosoft.com	Inspector
ssalt@maveninspectionalservices.onmicrosoft.com	Inspector
smurphy@maveninspectionalservices.onmicrosoft.com	Inspector
ajuan@maveninspectionalservices.onmicrosoft.com	Inspector
mtyson@maveninspectionalservices.onmicrosoft.com	Inspector
aholt@maveninspectionalservices.onmicrosoft.com	Inspector
lburns@maveninspectionalservices.onmicrosoft.com	Inspector
jlebean@maveninspectionalservices.onmicrosoft.com	Inspector
scook@maveninspectionalservices.onmicrosoft.com	Chief Inspector



# USERPRINCIPALNAME

USERPRINCIPALNAME()

Returns the user's principal name, typically the user email address  
(e.g. `aaron@mavendemo.com`)

= USERPRINCIPALNAME()



USERPRINCIPALNAME has no parameters

Example: [Email] = USERPRINCIPALNAME()

## HEY THIS IS IMPORTANT!



User Principal Name looks like an email address, but technically it's a combination of three items:

1. Person's **username** (i.e. `aaronp`)
2. "@" symbol
3. Company **domain** (i.e. `maven inspectional services`)

Filter data

Switch to default editor



1 [email\_address] = USERPRINCIPALNAME()

ⓘ Filter the data that this role can see by entering a DAX filter expression that returns a True/False value. For example: [Entity ID] = "Value"

Save

Close



# APPLYING RLS IN SERVICE

Once a security role is defined, it can be applied to users with **Viewer** permissions in Power BI Service

- 1** Confirm that users assigned to RLS roles have **Viewer** access

The screenshot shows the 'Manage access' section of a Power BI service page. A 'Viewer' role is selected and highlighted with a yellow box. The 'Manage access' button is also highlighted with a yellow box.

**HEY THIS IS IMPORTANT!**

If a user is assigned as an Admin, Member, or Contributor, **RLS will not work**

- 2** Add users or groups to the RLS rule and test by viewing as roles

The screenshot shows the 'Row-Level Security' configuration for a 'Los Angeles' rule. A 'Security' option is selected from a context menu. The 'Members' section shows a user 'Aaron' added to the role. Below, a preview of the report shows the 'Now viewing as: Los Angeles' message.

# ASSIGNMENT: ROW-LEVEL SECURITY





**NEW MESSAGE**

From: **David Schmitt (Lead Inspector)**

Subject: **Report permissions update**

Hey! I have a quick request that I think you can help solve. Samantha wants me to work on improving sanitation grades for regions 1-8, but right now I only have access to data for region 6. She gave me the green light to access data for the additional regions – could you please update my permissions when you get a chance?

Thanks!  
-Dave

**Reply**    **Forward**

## Key Objectives

1. Create a new **RLS role** to give David the access he needs
  - Name the role “Lead Inspector”
  - Validate the DAX code and save the role
2. Test the role in Power BI Desktop
  - Check the Report & Data views that the data is filtering as expected
3. Publish to Power BI Service and use “view as role” to confirm the role is working properly
  - **SPOT CHECK:** the slicer on the “Zip Code Detail” page should only show Facility Regions 1-8



# SOLUTION: ROW-LEVEL SECURITY

  **NEW MESSAGE**

From: **David Schmitt (Lead Inspector)**  
Subject: **Report permissions update**

Hey! I have a quick request that I think you can help solve. Samantha wants me to work on improving sanitation grades for regions 1-8, but right now I only have access to data for region 6. She gave me the green light to access data for the additional regions – could you please update my permissions when you get a chance?

Thanks!  
-Dave

**Reply** **Forward**

## Solution Preview

Roles

- + New
- Inspectors ...
- Lead Inspector** ...
- Los Angeles ...

Select tables

- Calendar Look... ...
- City Lookup ...
- Inspector Look... ...
- Measures Table ...
- Region Lookup** ...
- Restaurant Ins... ...
- Restaurnat Na... ...
- Sanitary Grade... ...

Filter data

```
1 [region_id] IN {1,2,3,4,5,6,7,8}
```

Switch to default editor

Structure | Calen

Now viewing as: Lead Inspector

region_id	facility_region
8	Northwest County
7	Northeast L.A.
6	Los Angeles
5	Harbor
4	Eastside
3	Central L.A.
2	Antelope Valley
1	Angeles Forest

Pages <> Viewing: Restaurant Inspections Now viewing as: Lead Inspector

Facility Region

- Select all
- Angeles Forest
- Antelope Valley
- Central L.A.
- Eastside
- Harbor
- Los Angeles
- Northeast L.A.
- Northwest County

Inspections & Violations

Zip Code Detail

Page 1



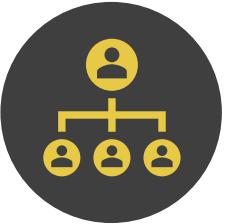


## KEY TAKEAWAYS

- ★ Set up **static roles** to configure access for small teams or individual users, without having to use complex logic or add new tables to the model
- ★ Use **dynamic roles** roles with **USERPRINCIPALNAME** for handling access for larger teams, or cases where team members change frequently
- ★ Always **test your security roles** to confirm that data is filtering properly, and remember that users must have **Viewer** permissions for RLS to apply

# SERVICE ADMINISTRATION

# POWER BI SERVICE ADMINISTRATION



In this section we'll provide an overview of the core **Power BI administration** roles, review admin settings and options, and introduce common tenant settings

## TOPICS WE'LL COVER

Admin Roles

Admin Portal

Tenant Settings

Customization

## GOALS FOR THIS SECTION

- *Learn common admin roles along with their capabilities and responsibilities*
- *Manage and enable features and functionality for your organization*
- *Practice configuring a Power BI tenant*



# ADMIN ROLES

There are multiple types of **admin roles**, each with a specific set of capabilities and responsibilities

**Admin roles** related to Power BI:

- ✓ **MS O365** admins can manage, configure and monitor Microsoft 365 services
- ✓ **Power Platform & Fabric** admins have full access to all MSFT Fabric management tasks
- ✓ **Capacity** admins can create, manage and restart Embedded capacity

Scope & Admin Role	Tasks	Typical Role
<b>Microsoft O365</b>		
Global Admin	-Unlimited access to all organizational features -Assigns roles to other users	IT / Business Owner
Billing Admin	-Manage subscriptions -Purchase Licenses	
License Admin	-Assign or remove licenses for users	
User Admin	-Create and manage users and groups -Reset user passwords	
<b>Power Platform &amp; Fabric</b>		
Power Platform or Fabric administrator	-Full access to MSFT Fabric management tasks -Enable & disable Microsoft Fabric features -Report on usage & performance -Review & manage auditing	IT / Director / Manager / Team Lead
<b>Capacity</b>		
Power BI Premium Admin	-Assign workspaces to the capacity -Manage user permission to the capacity -Manage workloads to configure memory usage -Restart the capacity	IT / Director / Team Lead



# ADMIN PORTAL

## Admin portal

Tenant settings New

Usage metrics

Users

Premium Per User

Audit logs

Domains New

Capacity settings

Refresh summary

Embed Codes

Organizational visuals

Azure connections

Workspaces

Custom branding

Protection metrics

Featured content

Help + support

The **admin portal** allows you to:

- Configure your tenant settings
- Monitor usage across your organization
- Manage users and access audit logs (O365 admin center)
- Set capacity settings for Power BI Premium, Embedded, Trial & Fabric
- Manage, View, and Edit the following:
  - Embed Codes
  - Organizational visuals
  - Workspaces
  - Featured Content
- Apply custom branding
- Monitor data protection metrics and sensitivity labels (Purview & Defender)

### HEY THIS IS IMPORTANT!

**Admin tools aren't available to everyone!** You may need to request access from an administrator within your organization



# TENANT SETTINGS

**Tenant settings** provide options to manage, configure, control, and deploy various capabilities and features within Power BI Service

Tenant settings categories:

- Microsoft Fabric settings
- Help & support settings
- Domain management settings
- Workspace settings
- Information protection (*additional licensing required*)
- Export & sharing settings
- Discovery settings
- App settings
- Integration Settings (*XMLA endpoints, ArcGIS maps, SSO, OneLake, etc.*)
- Power BI, R, and Python visuals
- Audit & usage Settings
- Dashboard Settings
- Developer settings
- Admin API settings
- Gen1 dataflow settings
- Template app settings
- Q&A Settings
- Semantic model security
- Advanced networking
- Metrics settings
- User experience experiments
- Insights settings
- Datamart settings
- Data model setting
- Quick measure suggestions
- Scale-out settings
- OneLake settings
- Git integration
- Copilot & Azure OpenAI Service
- + Preview, new, and updated options



## HEY THIS IS IMPORTANT!

Some tenant settings may expose your organization to risk. **Always configure your tenant to align with your org's security policies and best practices!**



# CUSTOM BRANDING

**Custom branding** allows you to personalize the look and feel of your organization's Power BI tenant

Custom branding

Customize the look of Power BI for your whole organization. [Learn more](#)

**Logo**  
For best results, upload a logo that's saved as a .png, 10 KB or smaller, and at least 200 x 30 pixels.



↑ Upload    Delete

**Cover image**  
For best results, upload a cover image that's saved as a jpg or .png, 1 MB or smaller, and at least 1920 x 160 pixels.



↑ Upload    Delete

**Crop**

**Theme color**  
 #252525

[Remove custom branding](#)

[Preview](#)    [Publish](#)

→ **Logo** – Add your company or client logo to the top left corner of the navigation pane

→ **Cover Image** – Add a cover image to feature on the Power BI Service home screen

→ **Theme Color** – Customize the background color of the top navigation bar across all pages



# HELP & SUPPORT SETTINGS

**Help and support settings** allow you to add custom URLs to the Power BI help menu to navigate users in your organization to internal resources

**Help and support settings**

✓ Publish "Get Help" information  
*Enabled for the entire organization*

Users in the organization can go to internal **help** and support resources from the Power BI **help** menu.

Enabled

Training documentation:  
 Enter URL

Discussion Forum:  
 Enter URL

Licensing requests:  
 Enter URL

Help Desk:  
 Enter URL

Apply to:

The entire organization

Specific security groups

Except specific security groups

**Add URLs** that your team members can use to access internal resources, including:

- Training documentation
- Discussion forums
- Licensing requests
- Help / support desk



# FEATURED CONTENT

**Featured content** allows you to showcase or feature reports on your Power BI Service home page

**Settings for AdventureWorks Report\_FINAL**

**Snapshot**

Upload Delete

**Endorsement**

Help coworkers find your quality content by endorsing this report. [Learn more](#)

None  
The report will appear in search results but isn't endorsed.

Promoted  
When you're ready to distribute the report to your coworkers, promote it to let them know.

Certified  
Certify your report to show coworkers that it's been reviewed and meets your org's certification criteria. [How do I get my report certified?](#)

Feature on Home  
Display this report in the Featured section on Power BI Home for people with access to it.

MAVEN ANALYTICS | Power BI Home

Search

Home Create Browse OneLake Data hub Apps Metrics

**Featured**

Aaron Parry featured this report Today at 2:15 PM

Maven\_Market\_Performance\_Report

Aaron Parry featured this report Today at 2:15 PM

Maven Cycles Report

Aaron Parry featured this report Today at 2:15 PM

AdventureWorks Report\_FINAL

Featured content appears in the “**Featured**” section on the home page

Enable **Feature on Home** in report settings



**PRO TIP:** Not seeing your featured content? You may need to switch the Home view from **Simplified** to **Expanded**



## KEY TAKEAWAYS

- ★ There are multiple types of **Power BI admin roles**, each with a specific set of capabilities and responsibilities
- ★ **Tenant settings** provide options to manage, configure, control, and deploy various capabilities and features within Power BI Service
- ★ You can **customize your Power BI tenant** by linking internal documentation and resources, featuring reports on your homepage, or adding custom branding
- ★ Always adhere to **security policies and best practices**, as some admin settings can expose your organization to risk



# LEARN ON!

