

Leveraging Large Language Models with Power BI

June 25th, 2025

About Me

Experience

- •11+ years with Microsoft BI stack
- •8+ years with PowerPivot/Power BI
- •5+ years with Azure DevOps

Contact Me

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John Kerski

Blog

Credentials

• MCSE: Productivity

• MS: PBI Data Analyst

• PMP







Agenda

- The Challenge
- Scenarios
 - GitHub Copilot
 - Azure OpenAl
 - Copilot in Fabric
- Lessons Learned

The Challenge

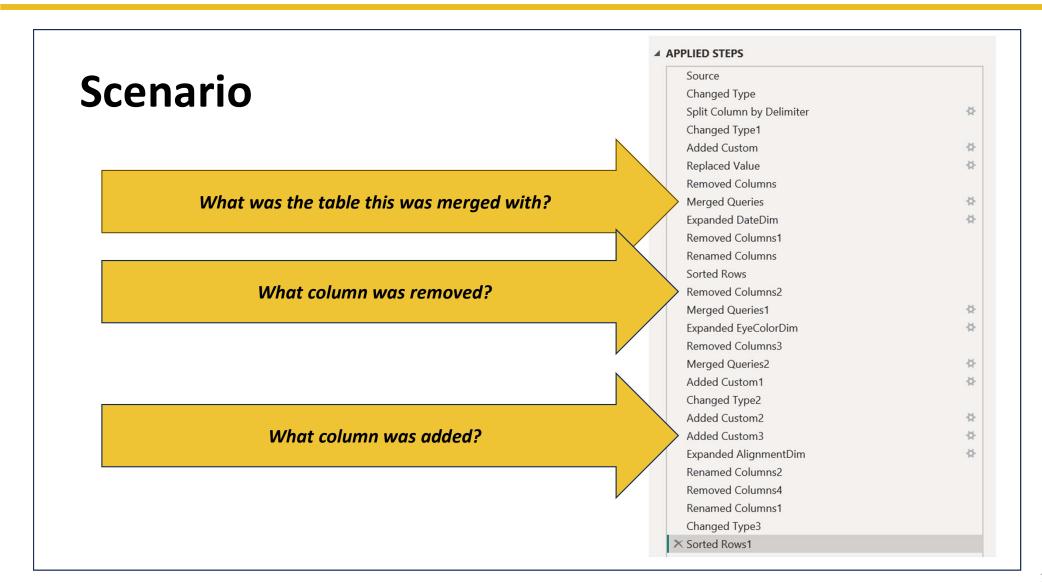


The Challenge (cont.)



Scenario 1







Manual Commenting Code







Prerequisites

- GitHub Copilot
- PBIP Format

GitHub CoPilot Prompts

You are an assistant to help Power Query developers comment their code. Please update each line of code by performing the following:

- 1) Insert a comment above the code explaining what that piece of code is doing.
- 2) Do not start the comment with the word Step or a number
- 3) Do not copy code into the comment.
- 4) Keep the comments to a maximum of 225 characters.

You are an assistant to help Power Query developers comment their code.

Please update each line of code by performing the following:

- 1) Update the variable name explaining what that piece of code is doing.
 - 2) The variable name should always start with a verb in the past tense.
 - 3) The variable name should have spaces between words.
 - 4) Please keep the variable to a maximum of 50 characters.
- 5) The variable name should be wrapped in double quotes and preceded by the '#'

You are an assistant to help Power Query developers comment their code. Please update each line of code by performing the following:

- 1) Insert a comment above the code explaining what that piece of code is doing.
- 2) Do not start the comment with the word Step or a number
- 3) Do not copy code into the comment.
- 4) Keep the comments to a maximum of 225 characters.

Please also update each line of code by performing the following:

- 1) Update the variable name explaining what that piece of code is doing.
 - 2) The variable name should always start with a verb in the past tense.
 - 3) The variable name should have spaces between words.
 - 4) Please keep the variable to a maximum of 50 characters.
- 5) The variable name should be wrapped in double quotes and preceded by the '#'

Scenario 2



Scenario 2 - Prerequisites

- Premium, Premium Per User or Fabric Workspace
 - Requires XMLA connection
- Azure OpenAl
 - A ChatGPT 4.0 model deployed. Instructions can be followed at this link.
 - GCC
 - <u>Federal-Business-Applications/whitepapers/copilot at main · microsoft/Federal-Business-Applications (github.com)</u>

DEMO Power Query Code Enhancements with a Large Language Model Please select the dataset name, then table name to see the commented code. Right click on the commented code and choose "Copy Value" to copy over to your dataset Select Table Select Enhancement Options MarvelSource Additional Comments Additional Comments & Variable Name Changes **Power Query** Semantic **Enhancements with** #"Source" = Csv.Document(Web.Contents(WebURL),[Delimiter=",", Columns=13, Encoding=65001, If This code is utilizing Power Query to import a CSV file from a specified web URL and parse it into a table structure, it also sets the Model QuoteStyle=QuoteStyle.None]), #"Promoted Headers" = Table PromoteHeaders(#"Source", [PromoteAlScalars=true]). qualifying characters are used in the data. #"Source" = Csy Document/Web Contents(Web URL)[Delimiter="", Columns=13, Encoding=65001, QuoteStyle=QuoteStyle None]), Azure OpenAl #Priorizor Peases = Total or Introduced Service Source (Priorizons/Camis-Eure). #Priorizor Pape End, Fursion Type Left, Fundor Headers (Figure J. W. Hart Type). | Financia Type Left, Fursion Type Left, Fundor Left, Type Left, Fundor If This code is promoting the first row of the table referenced as #"Source" to headers. The option PromoteAllScalars' set to true indic #"Promoted Headers" = Table PromoteHeaders(#"Source", (PromoteAllScalars=true)). #Prioration readers ** labor fromovereadray course, [rrontoverocades-source]. #This code is transforming the data byte of various columns within the blate "Promoted Headers". Some columns are being converte #Changed Type" = Table TransformColumnTypes(#Promoted Headers" [[*page_id", ht64 Type], [*name", type text], [*Vest", int64 Type]] [*CSMI*, type text], [*VALVE*, type text], [*Vest", int64 Type]] [*FRST APPEARANCE*; type text], [*Vest", int64 Type]]) Report Azure OpenAl (GPT 4.0) https://github.com/kerski/pbi-pq-commenter-with-azure-openai/tree/main

Scenario 3

Scenario 3 - Prerequisites

• Enable Copilot in Fabric

Prompts

Generate a test case for each measure with the following columns:

- 1) TestName This should describe the test conducted and be less than 255 characters
- 2) Expected Value The expected value for the test.
- 3) ActualValue The actual value returned from the DAX query.
- 4) Passed A boolean value that compares ExpectedValue and ActualValue

The test should compare a static value with the measure to see if they match. Generate a test case for each table that checks the table has more than zero rows using the COUNTROWS function. The output should contain following columns:

- 1) TestName This should describe the test conducted and be less than 255 characters
- 2) Expected Value The expected value for the test.
- 3) ActualValue The actual value returned from the COUNTROWS function.
- 4) Passed A boolean value that compares ExpectedValue and ActualValue



Lessons Learned - Prompts

ChatGPT Prompt Engineering for Developers

You are an assistant to help Power Query developers comment their code.

Please take the code between the ``` Indicate markers n the following:

- 1) Return a comment explaining what that piece of code is doing.,
- 2) Do not start the comment with the word Step or a number,
- 3) Do not copy code into the comment.
- 4) Keep the comments to a maximum of 225 characters.

``` [Code] ```

Set boundaries

Set the premise

### **Lessons Learned (cont.)**

### **Token Limits**

- 1 token ~= 4 chars in English
  - By Model Microsoft Documentation

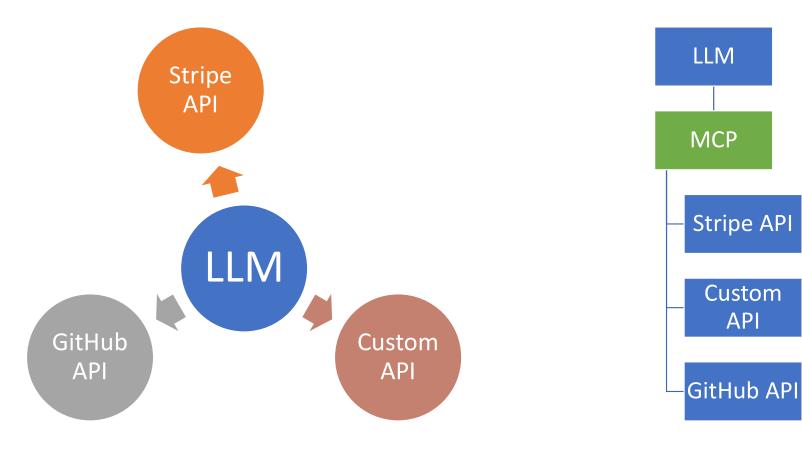
# Response M Code + Verbose Comments ~ 6,000 Tokens Prompt + M Code ~ 3,000 Tokens

Strategies - Greg Kamradt

### **Security Considerations**

- Data, privacy, and security for Azure OpenAl Service
- Protect the Key
  - Vote Microsoft make this easier
- Make this Easier
  - Power Query Commenting with Co-Pilot/Large Language Models

### **Model Context Protocol (MCP)**



### Thank you

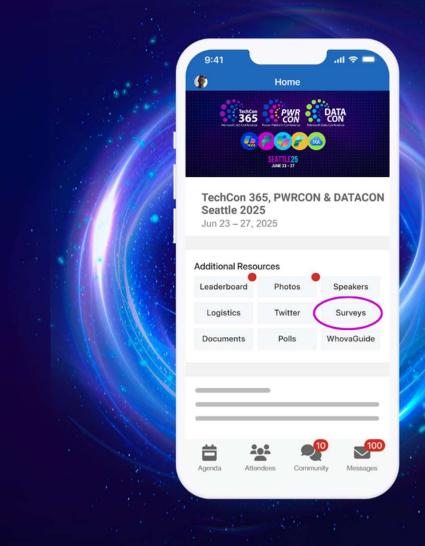
### **Contact Me**

X @JKerski

John Kerski

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