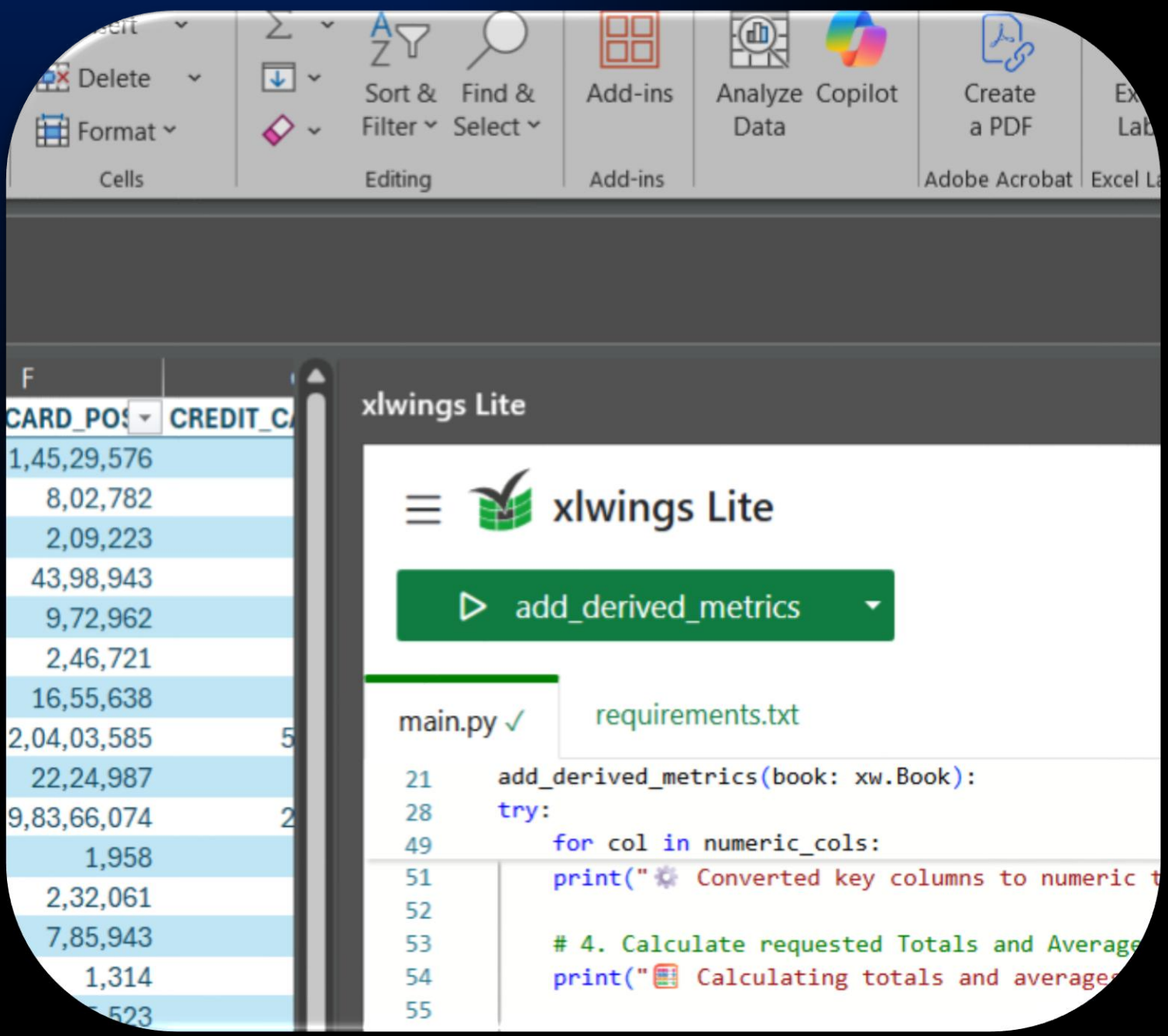
xlwings Lite: The AI Way

Your Quick Start to Python In Excel

Coding Experience not Required

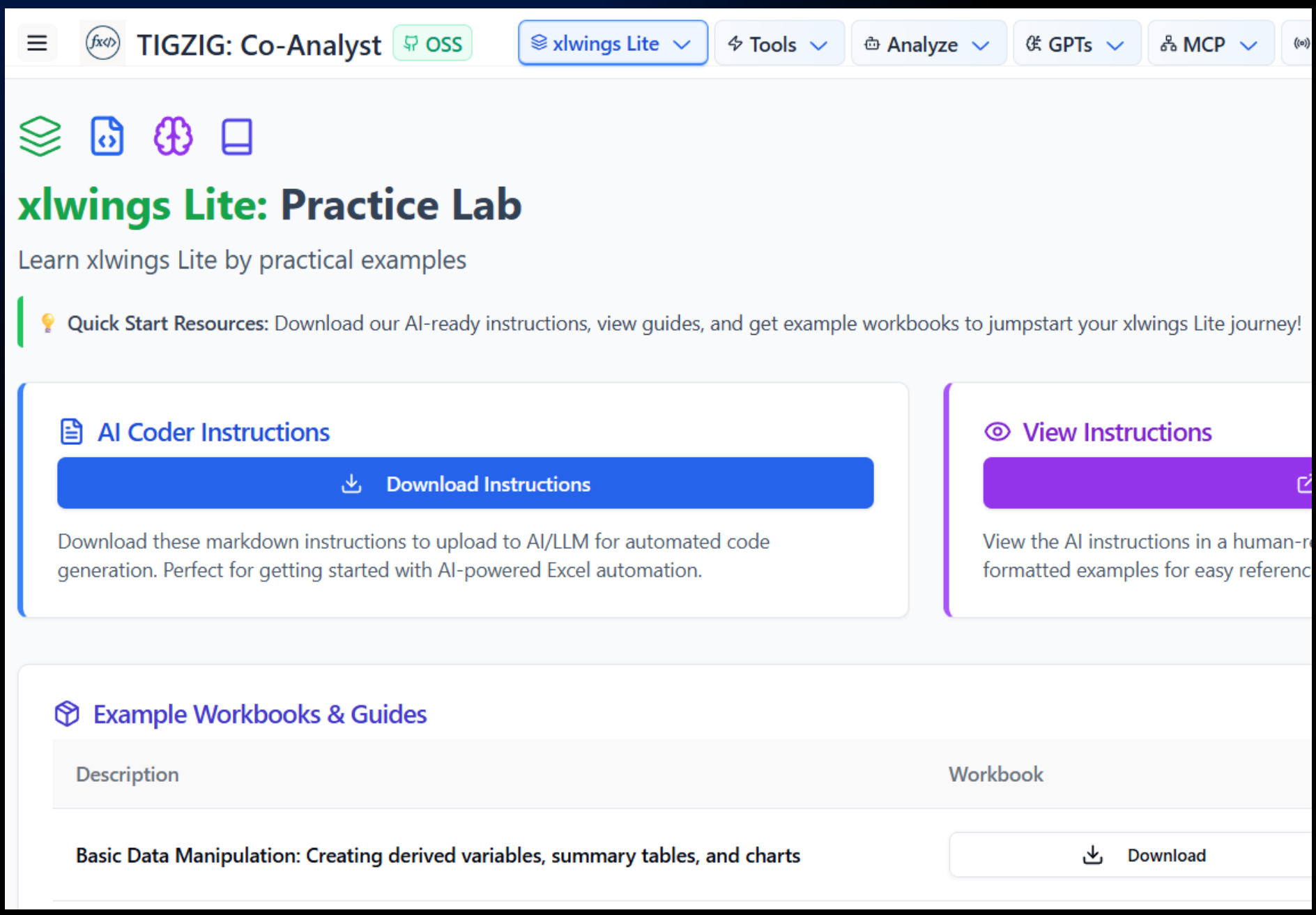


Module 01

Data Transormations, Visualizations and AI Generated variables

Download Starter Kit

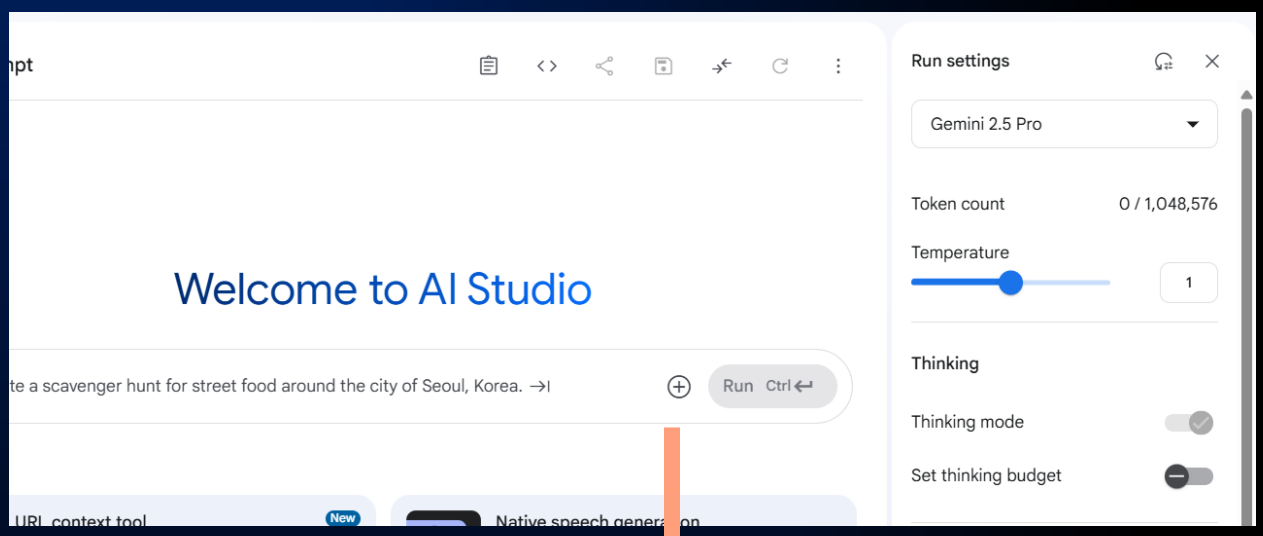
app.tigzig.com



Setup AI

Use Google AI Studio
A powerhouse of AI Tools. Free.

aistudio.google.com

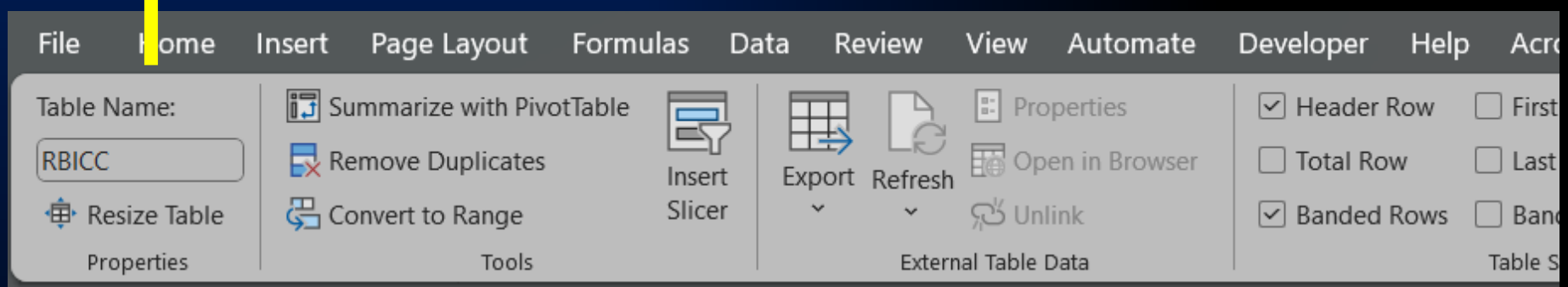


1. Upload AI_CODER_INSTRUCTIONS.md

2. Put Starter Prompt from example workbook and hit enter

Prepare Your Data

Best Practice: Setup data as a ‘Table’



C6 | INDIAN BANK

	A	B	C	D	E
1	CATEGORY	DATE	BANK_NAME	CREDIT_CARDS_NO	CREDIT_CARD
2	Public Sector Banks	31 March 2025	BANK OF BARODA	30,43,116	73,
3	Public Sector Banks	31 March 2025	BANK OF INDIA	72,760	1,
4	Public Sector Banks	31 March 2025	BANK OF MAHARASHTRA	27,869	
5	Public Sector Banks	31 March 2025	CANARA BANK	9,62,773	10,
6	Public Sector Banks	31 March 2025	INDIAN BANK	2,83,126	2,
7	Public Sector Banks	31 March 2025	INDIAN OVERSEAS BANK	72,673	
8	Public Sector Banks	31 March 2025	PUNJAB NATIONAL BANK	6,04,213	3,
9	Public Sector Banks	31 March 2025	STATE BANK OF INDIA	2,08,23,857	2,66,
10	Public Sector Banks	31 March 2025	UNION BANK OF INDIA	4,95,099	4,
11	Private Sector Banks	31 March 2025	AXIS BANK LTD	1,48,99,543	3,81,

Sample data in Excel workbook

Install xlwings Lite Add-in

Installation

1. Click on the `Add-ins` button in Excel. Usually, it is located on the `Home` tab, but if you are using an older version of Excel, it could be on the `Insert` tab.
2. Search for `xlwings`
3. Click on `Add` to install.

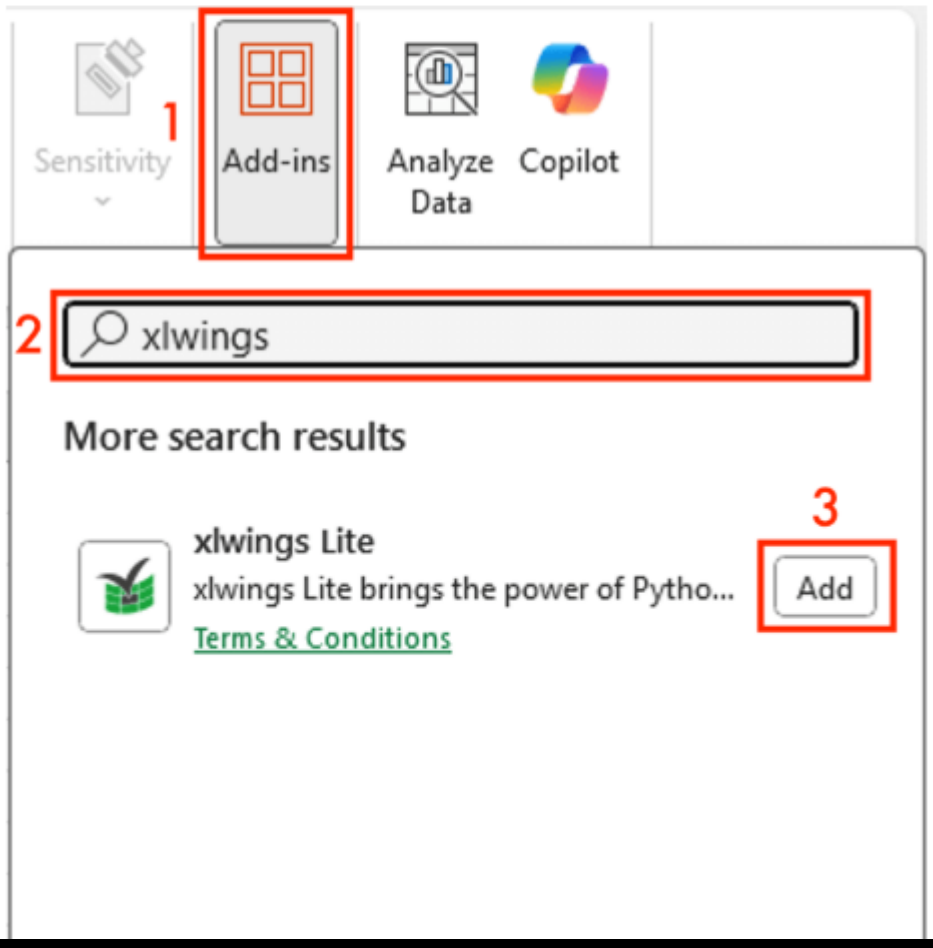


Image from lite.xlwings.com

Asking AI for Data Transformations

Prompt 1

Instruct AI for metrics and calculations you need

Prompt 1 : Creating Derived Variables

See attached few sample rows. Data is formatted as table name RBICC. Gimme code to add the following fields:

Totals for credit card value and volume
Average per credit card for value and volume

Keep in mind that the volume is in actuals and value is in Rs. '000. I want the averages as actuals. In addition – I want to do profiling of the banks. So add additional derived variables that could be helpful and insightful – add between 5–10 additional variables based on your judgment.

CATEGORY DATE BANK_NAME CREDIT_CARDS_NOS CREDIT_CARD_POS_TXN_VOLUME_NOS CREDIT_CARD_POS_TXN_VALUE_AMT CREDIT_CARD_ECOM_VOLUME_NOS CREDIT_CARD_ECOM_VALUE_AMT Public Sector Banks 31 March 2025 BANK OF BARODA 30,43,116 73,31,814 1,45,29,576 33,50,020 1,76,45,596 Public Sector Banks 31 March 2025 BANK OF INDIA 72,760 1,79,338 8,02,782 64,587 3,23,581 Public Sector Banks 31 March 2025 BANK OF MAHARASHTRA 27,869 43,827 2,09,223 19,575 1,10,022 Public Sector Banks 31 March 2025 CANARA BANK 9,62,773 10,84,539 43,98,943 4,91,612 29,71,536

Describe new fields in natural language

Specify data gotchas

ALWAYS show AI the data in the very first prompt

Ask AI to create insightful variables, if required

All Prompts in Example Workbook

Run the AI Generated Code

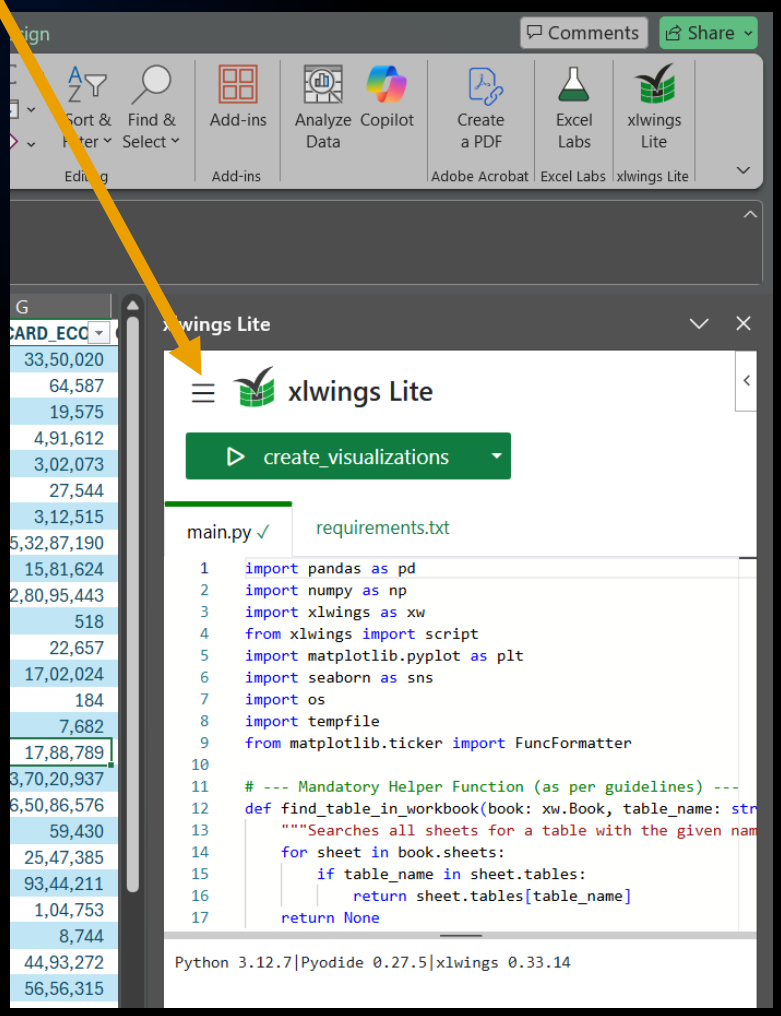
AI will give you a code – paste that into main.py and run it (it will show up the name of function created)

Python Script for xlwings Lite

Generated python

```
import pandas as pd
import numpy as np
import xlwings as xw
from xlwings import script

# Golden Rule 1: ALWAYS use this helper function to locate tables robustly
```



Validate Outputs

The calculations we specifically requested

	H	I	J	K
)	CREDIT_CARD_ECOM_VALUE_AMT	TOTAL_CC_TXN_VOLUME_NOS	TOTAL_CC_TXN_VALUE_AMT_000	AVG_TXN_VOLUME_PER_(
20	1,76,45,596	1,06,81,834	3,21,75,172	
87	3,23,581	2,43,925	11,26,363	
75	1,10,022	63,402	3,19,245	
12	29,71,536	15,76,151	73,70,479	
73	13,71,482	5,13,202	23,44,445	

8 Extra variables from AI based on its judgment

M	N	O	P	
AVG_POS_TICKET_SIZE_ACTUAL	AVG_ECOM_TICKET_SIZE_ACTUAL	AVG_OVERALL_TICKET_SIZE_ACTUAL	POS_VOLUME_SHARE_PCT	E
1,982	5,267	3,012	69	
4,476	5,010	4,618	74	
4,774	5,621	5,035	69	
4,056	6,044	4,676	69	
4,608	4,540	4,568	41	
3,285	4,218	3,535	73	

Tip: For AI-derived variables, you can push the boundaries by increasing the variable count, or focus on a particular type of metric—e.g., % compositions, market share, etc.

What if you get an error?

Copy the error, paste it into the AI, and ask it to fix it.

AI will share back the revised code or let you know if something required from your end

Creating Profile Summary

Prompt 2

Describe one or more summarizations – across any level and the KPI's required

Prompt 2 : Creating Profile Summary

Now give me a nicely formatted summary showing all the profiling variables grouped by category. Use the profiling variables I had asked for, plus the ones you had created. Put that in a new sheet called RBI_SUMM. Delete any existing sheet if it exists.

But keep in mind - you can't just do the average of the average by using the earlier derived variables. You'd need to recompute them at the grouped level.

AI remembers past codes and conversations. You don't need to specify all the variables one by one.

But validate output- once in a while it 'forgets'

Specify data gotchas

All Prompts in Example Workbook

Profile Summary

Profile Summary output in a new sheet titled RBI_SUMM

	A	B	C	D
1	**Credit Card Profiling Summary by Category**			
2				
3	**Category**	**Avg Transactions per Card**	**Avg Spend per Card (Rs)**	**Avg Ticket Size (Rs)**
4	Foreign Banks	2.7	21,984.2	8,008.0
5	Private Sector Banks	4.5	19,624.3	4,407.8
6	Public Sector Banks	3.6	14,291.9	3,934.8
7	Small Finance Banks	2.8	9,066.9	3,257.8
8				
9				
10				

Tip: Ask AI to create as many cuts as you need and have it place the tables one below the others.

All Prompts in Example Workbook

Creating Charts

Prompt 3

Prompt 3 : Creating Charts

Gimme the following charts, all nicely formatted and all. Paste them one below the other into a new sheet called charts.

1. Correlation matrix for all the numeric variables (take only the original variables)

2. Bar chart of top 10 banks by average credit card value

3. Combo bar chart – 2 axis – from the profiling table you created for average volume and value per card

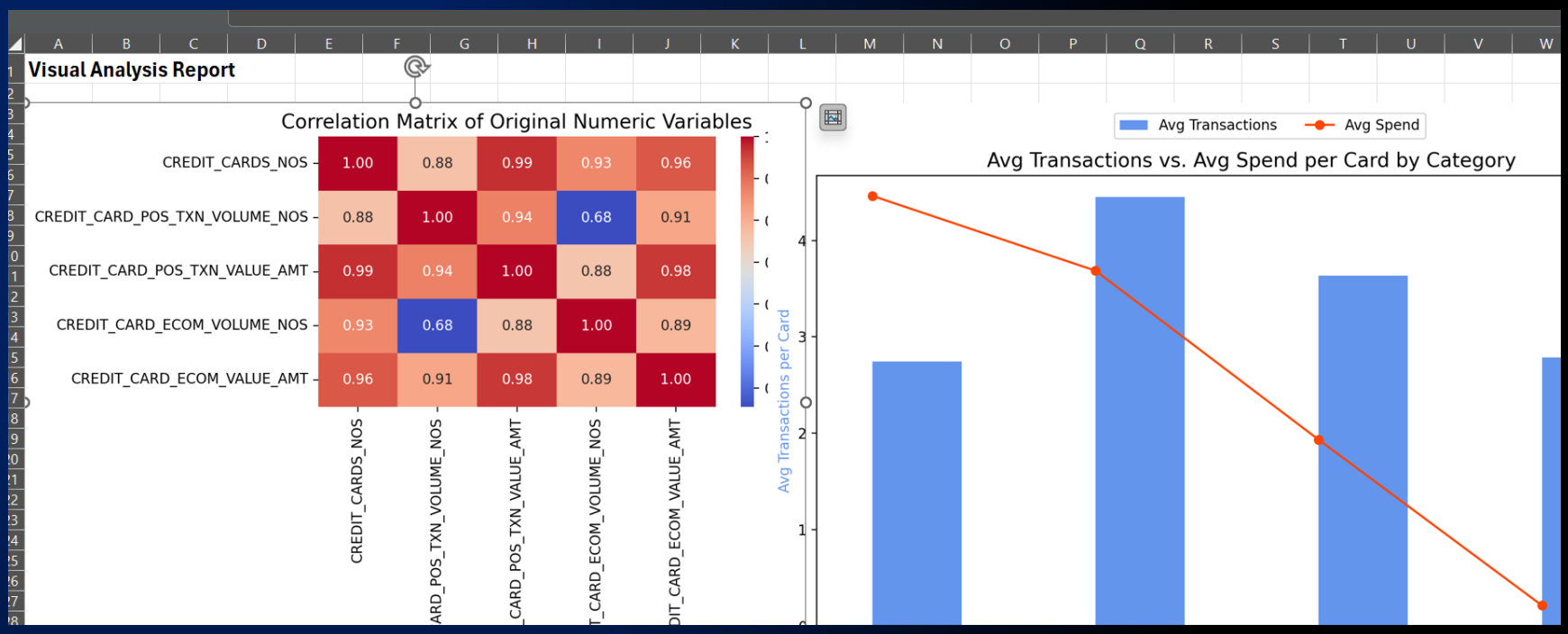
4. Box plots for all the original numeric variables

Tip: Get the basic charts out, and then go for formatting - label fonts, title placement, axis etc

Tip: To get multi-panel chart ask AI to e.g. keep the bar chart as the main chart and add the line chart as a subplot

All Prompts in Example Workbook

Refine Charts



⚠ It did not place the charts one below the others. Share the image and ask it to fix it.

Tip: Get the basic chart out and share instruction to refine the visuals. E.g

Reduce correlation matrix size by ~50%
Increase chart title size and place it top right
Remove Y-axis line and ticker
Reduce legend size and keep it on top right

All Prompts in Example Workbook

Validate Always

⚠ Validations are sacrosanct – AI or no AI

AI's make mistakes – from formulas to logic.
Far less than humans – but it happens
Always validate output

```
52
53      # 4. Calculate requested Totals and Averages
54      print("🧮 Calculating totals and averages...")
55
56      # --- Totals ---
57      df['TOTAL_CC_TXN_VOLUME_NOS'] = df['    D    'ARD_POS_TXN_VOLUME_NOS'] + df['CREDIT_CARD_ECOM_VOLUME_
58
59      # Value is in '000s, so we calculate      tal in '000s first
60      df['TOTAL_CC_TXN_VALUE_AMT_000'] = df['CREDIT_CARD_POS_TXN_VALUE_AMT'] + df['CREDIT_CARD_ECOM_VALUE
61
62      # --- Averages (in actuals) ---
63      # Convert total value to actuals for average calculation
64      total_value_actual = df['TOTAL_CC_TXN_VALUE_AMT_000'] * 1000
65
66      df['AVG_TXN_VOLUME_PER_CARD'] = df['TOTAL_CC_TXN_VOLUME_NOS'] / df['CREDIT_CARDS_NOS']
67      df['AVG_TXN_VALUE_PER_CARD_ACTUAL'] = total_value_actual / df['CREDIT_CARDS_NOS']
68
```

Best Practice: Review the core parts of the code e.g formulas – they will look just like excel formulas and intuitive to understand

Tip: For complex logic and formulas, ask AI to walk you through it step by step

Working with AI
Top 4 Tips

Show what you see
Share sample records and screen shots of what you see

One Step at a Time
Avoid too many things in one instruction.

Break the App
Run stress tests to identify scenarios that could mess up your automation

Run AI Audit
Ask AI to identify problems with code and logic

Power User Tip
Dictate Your Prompts

Typing long, detailed instructions is slow. Use your operating system's built-in dictation to work faster.

Windows

On Windows: Press Win + H to start Voice Typing.

On macOS: Press the Microphone key (F5) or press the Fn key twice.

Ask AI to be Your Guide

Don’t hesitate to ask the simple questions. The AI's only job is to help

“What are these df and def things in the code?”

“I don’t get it. Can you explain in a different way ”

It will not judge you

It will be patient

It will not give up till you get it

TIGZIG Co-Analyst

Get the Starter Kit
and All Future Modules
Free

app.tigzig.com

Open Source

Amar Harolikar

Specialist – Decision Sciences & Applied Gen AI

Building Practical AI Tools for Analytics & Data Science