1. **#xlwings** is a useful **#excel** add-in. It is around since long, but I came across it recently. It allows:

1. **#sql** query to be written and run directly in excel.

2. backend seamless **#python** (**#pythonprogramming**) integration by smooth access of user defined functions (**#udf**) written in python directly as excel functions.

3. Since python has close interweaving with **#cprogramming** - possibilities become endless (I have demonstrated it in the example excel file which calls user defined C function in a dll from excel using xlwings - python - c bridge). Last tab demonstrates how it can be put to use as decision support for investment decisions with alternative excel options also included there (MAP + LAMBDA functions combination)

Link to my google drive folder where all files have been uploaded:

https://drive.google.com/drive/folders/11vqmp0UiBK\_1VJTwxbfR6qJ2RCClJZOU?usp=drive\_link

I have also included source C file (to create dll library from that) and of course python script file with extension py.

Credit for the most critical part of this new learning almost entirely goes to **#bingai** which took care of entire coding part (python scripts, C source code, compilation into dll, etc.). I was simply acted more as a mentor in guiding it to achieve bug free code.

There are pre-requisites to know before you can try these examples smoothly:

1. Install Python (https://www.python.org/ftp/python/3.12.1/python-3.12.1-amd64.exe) and all required libraries (indicated by import command in the beginning of python script file)

2. Install gcc toolchain (If you want to try to compile C source code into dll) (https://winlibs.com/#download-release) [I have not tried compilation of dll using Visual Studio - Those opting for that may need to take a different route)

3. Install Powershell (You can download and extract from Zip files - No need for admin access in Windows: https://github.com/PowerShell/PowerShell/releases/download/v7.4.0/PowerShell-7.4.0-win-x64.zip) - If you want to test or play with python scripts in terminal like interface - I have not used GUI option in Python)

4. Excel 365 required - Many of the features may not be back ported to previous versions.

5. If you are stuck up installing xlwings add-in, navigate to: <https://docs.xlwings.org/en/latest/>

6. In python script file, you need to change the folder – starting with D:\ to wherever you are saving dll library.

1. Json – excel conversion:

Json has, of late, been a favoured format for exchange of data like xml. It is widely used in as much as modern “No SQL” databases like #mongodb prefer saving data in that format. Incidentally, Python dictionaries share a very close structure to that format and therefore converting json file to excel with Python as bridge is relatively easier.