

Installation and Usage Guide of the **POSample** Package

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1 Installation

1. Make sure to download the **Python 3.9.7** from here, otherwise we will have an error about "distutils" package which is deprecated and removed in the latest Python version

Files					
Version	Operating System	Description	MD5 Sum	File Size	GPG
Gzipped source tarball	Source release		5f463f30b1fdbc545f156583630318b3	25755357	SIG
XZ compressed source tarball	Source release		fdcb060b483bc01850a3f412eea1d954	19123232	SIG
macOS 64-bit Intel installer	macOS	for macOS 10.9 and later	ce8c2f885f26b09536857610644260d4	30038206	SIG
macOS 64-bit universal2 installer	macOS	for macOS 10.9 and later, including macOS 11 Big Sur on Apple Silicon (experimental)	825067610b16b03ec814630df1b65193	38144099	SIG
Windows embeddable package (32-bit)	Windows		6d12e3e0f942830de8466a83d30a45fb	7652688	SIG
Windows embeddable package (64-bit)	Windows		67e19ff32b3ef62a40bccd50e33b0f53	8473919	SIG
Windows help file	Windows		b92a78506ccf258d5ad0d98c3411fc5d1	9263789	SIG
Windows installer (32-bit)	Windows		0d949bdfdbdc8c66107a980a95efd85	27811736	SIG
Windows installer (64-bit)	Windows	Recommended	cc3eabc1f9d6c703d1d2a4e7c041bc1d	28895456	SIG

Figure 1: Python Version 3.8.0 for Windows (64-bit)

2. Execute the downloaded file. Ensure to check the box in the first page of the installer that says "Add Python 3.9 to PATH".
3. Next, to install the POSample package if we have the Internet connection, type the following code in the terminal:

```
git clone https://github.com/HongyuMou/POSample.git
cd POSample
pip install .
```

where the first line requires an internet connection to work, and all the required dependency packages would be installed at the same time.

On an **offline** server where Python 3.9.7 is prepared, steps are:

- (a) Unzip the "POSample" package
 - (b) Download and install the dependencies separately. The list of them are located in "memo/requirements.txt"
 - (c) Navigate to the directory where you unzipped the package using "cd unzipped_POsample_directory"
 - (d) Use the command: 'pip install .' This command tells 'pip' to install the package located in the current directory. If 'pip' is not installed, you might need to install it first
4. After a successful installation, type "py" in the terminal to enter into the Python environment.

```

Microsoft Windows [Version 10.0.22621.3897]
(c) Microsoft Corporation. All rights reserved.

C:\Users\35839>git clone https://github.com/homayshu/POSample.git
Cloning into 'POSample'...
remote: Enumerating objects: 156, done.
remote: Counting objects: 100% (156/156), done.
remote: Compressing objects: 100% (125/125), done.
remote: Total 156 (delta 58), reused 114 (delta 27), pack-reused 8 (receiving objects: 75% (117/156), 19.75 MiB | 746.00
Receiving objects: 100% (156/156), 21.12 MiB | 1007.00 KiB/s, done.
Resolving deltas: 100% (58/58), done.

C:\Users\35839>cd POPSample

C:\Users\35839\POSample>pip install .
Processing c:\users\35839\posample
Requirement already satisfied: numpy==1.22.4 in c:\users\35839\appdata\local\programs\python\python38\lib\site-packages (from POPSample==0.4) (1.22.4)
Requirement already satisfied: pandas==1.3.4 in c:\users\35839\appdata\local\programs\python\python38\lib\site-packages (from POPSample==0.4) (1.3.4)
Requirement already satisfied: seaborn==0.11.2 in c:\users\35839\appdata\local\programs\python\python38\lib\site-packages (from POPSample==0.4) (0.11.2)
Requirement already satisfied: matplotlib==3.4.3 in c:\users\35839\appdata\local\programs\python\python38\lib\site-packages (from POPSample==0.4) (3.4.3)
Requirement already satisfied: scipy==1.10.1 in c:\users\35839\appdata\local\programs\python\python38\lib\site-packages (from POPSample==0.4) (1.10.1)
Requirement already satisfied: scikit-learn==0.24.2 in c:\users\35839\appdata\local\programs\python\python38\lib\site-packages (from POPSample==0.4) (0.24.2)
Requirement already satisfied: statsmodels==0.13.5 in c:\users\35839\appdata\local\programs\python\python38\lib\site-packages (from POPSample==0.4) (0.13.5)
Requirement already satisfied: openpyxl==1.0.9 in c:\users\35839\appdata\local\programs\python\python38\lib\site-packages (from POPSample==0.4) (1.0.9)
Requirement already satisfied: setuputils==58.0.4 in c:\users\35839\appdata\local\programs\python\python38\lib\site-packages (from POPSample==0.4) (58.0.4)
Requirement already satisfied: pytz==2017.3 in c:\users\35839\appdata\local\programs\python\python38\lib\site-packages (from pandas==1.3.4->POSample==0.4) (2017.3.post1)
Requirement already satisfied: python-dateutil==2.7.3 in c:\users\35839\appdata\local\programs\python\python38\lib\site-packages (from pandas==1.3.4->POSample==0.4) (2.8.2)
Requirement already satisfied: cycler==0.10 in c:\users\35839\appdata\local\programs\python\python38\lib\site-packages (from matplotlib==3.4.3->POSample==0.4) (0.12.1)
Requirement already satisfied: kiwisolver==1.0.1 in c:\users\35839\appdata\local\programs\python\python38\lib\site-packages (from matplotlib==3.4.3->POSample==0.4) (1.4.5)
Requirement already satisfied: pyparsing==2.2.1 in c:\users\35839\appdata\local\programs\python\python38\lib\site-packages (from matplotlib==3.4.3->POSample==0.4) (3.1.1)
Requirement already satisfied: pillow==6.2.0 in c:\users\35839\appdata\local\programs\python\python38\lib\site-packages (from matplotlib==3.4.3->POSample==0.4) (10.2.0)
Requirement already satisfied: threadpoolctl==2.0.0 in c:\users\35839\appdata\local\programs\python\python38\lib\site-packages (from scikit-learn==0.24.2->POSample==0.4) (3.2.0)
Requirement already satisfied: joblib==0.11 in c:\users\35839\appdata\local\programs\python\python38\lib\site-packages (from scikit-learn==0.24.2->POSample==0.4) (1.3.2)
Requirement already satisfied: patsy==0.5.2 in c:\users\35839\appdata\local\programs\python\python38\lib\site-packages (from statsmodels==0.13.5->POSample==0.4) (0.5.4)
Requirement already satisfied: packaging==21.3 in c:\users\35839\appdata\local\programs\python\python38\lib\site-packages (from statsmodels==0.13.5->POSample==0.4) (23.2)
Requirement already satisfied: et-xmlfile in c:\users\35839\appdata\local\programs\python\python38\lib\site-packages (from openpyxl==1.0.9->POSample==0.4) (1.1.0)
Requirement already satisfied: six==1.5 in c:\users\35839\appdata\local\programs\python\python38\lib\site-packages (from python-dateutil==2.7.3->pandas==1.3.4->POSample==0.4) (1.16.0)
Installing collected packages: POPSample
  Found existing installation: POPSample 0.4
    Uninstalling POPSample-0.4:
      Successfully uninstalled POPSample-0.4
  Running setup.py install for POPSample ... done
Successfully installed POPSample-0.4
WARNING: You are using pip version 19.2.3, however version 23.3.2 is available.
You should consider upgrading via the 'python -m pip install --upgrade pip' command.

C:\Users\35839\POSample>python
Python 3.8.0 (tags/v3.8.0:fa919fd, Oct 14 2019, 19:37:50) [MSC v.1916 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>> from POPSample import POPSample
>>> csv_file_path = 'POSampleDGP_simul_example.csv'
>>> POPSample(csv_file_path)
All outputs have been saved to POPSample_output_logfile.txt
>>> |

```

Figure 2: Command Illustration for Installation

2 Example Usage

1. In the python environment that we just opened, type:

```

from POPSample import POPSample
csv_file_path = 'POSampleDGP_simul_example.csv'
POSample(csv_file_path)

```

```

C:\Users\35839\POSample>python
Python 3.8.0 (tags/v3.8.0:fa919fd, Oct 14 2019, 19:37:50) [MSC v.1916 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>> from POPSample import POPSample
>>> csv_file_path = 'POSampleDGP_simul_example.csv'
>>> POPSample(csv_file_path)
All outputs have been saved to POPSample_output_logfile.txt
>>> |

```

Figure 3: Command Illustration of Example Usage

2. After waiting for around two minutes for this simulated two program example (each program has 100,000 obs), the following results for each program will be automatically generated in the same "POSample" folder
 - Logfile of output: "POSample_output_logfile.txt"
 - Coefficient and Std tables: tables folder
 - Figures: figures folder

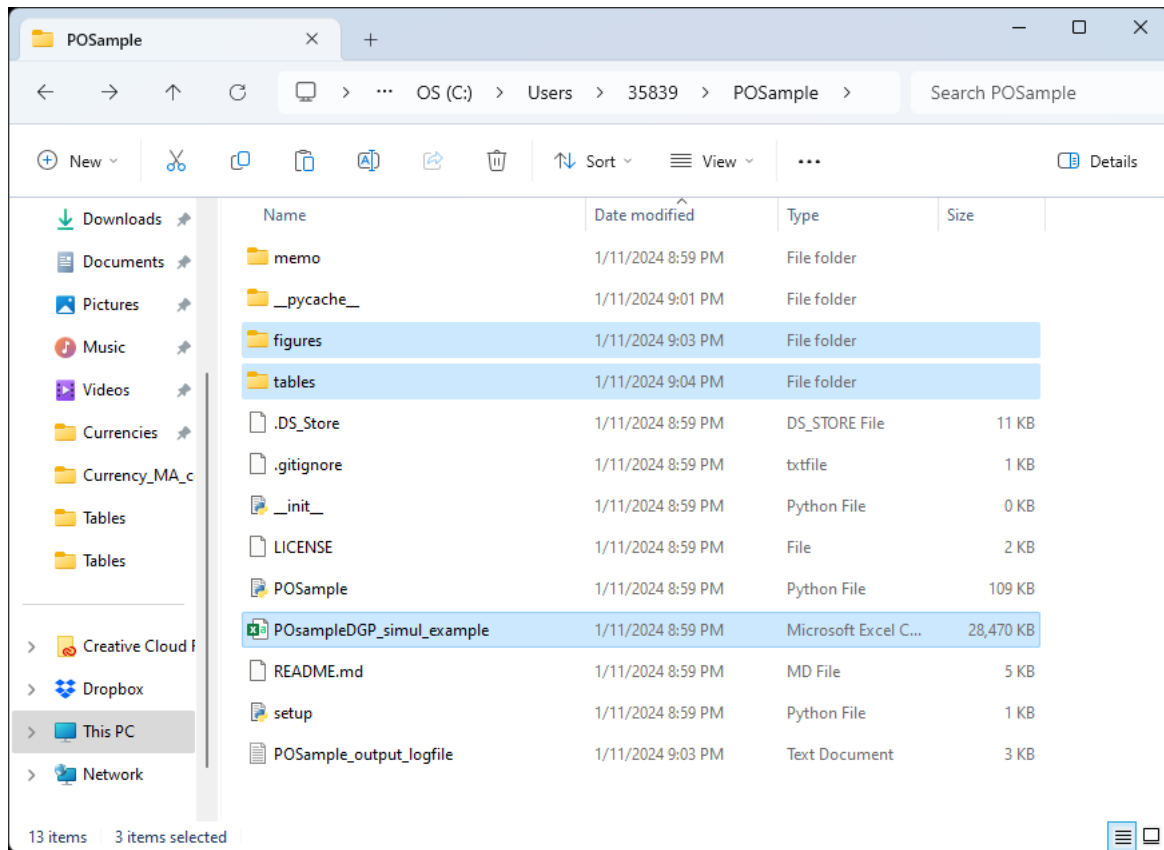


Figure 4: Results Location of Example Usage

3. In the "memo" folder, I put the PDF results for program 0, which tells in detail about how each regression and figure would fit into our analysis.