SimpleGM - A graphical user interface for simple ground motion processing

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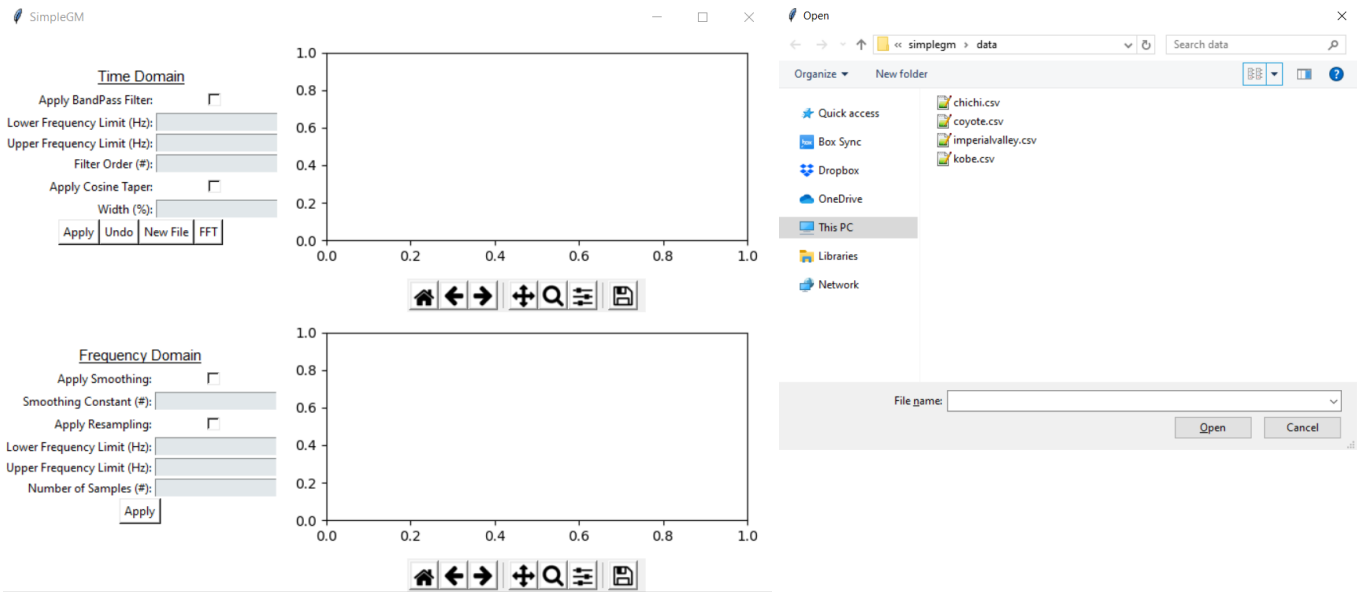
SimpleGM is a graphical user interface for *SigProPy*, an open-source digital signal processing module for Python. *SimpleGM* was built as an easy-to-use interface for performing some of the most common methods of ground motion processing.

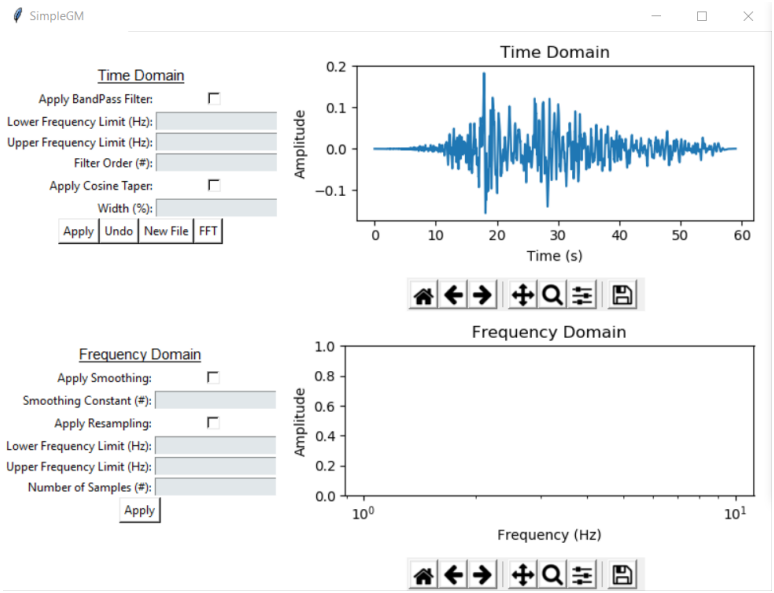
Getting Started

After downloading and unzipping the repository:

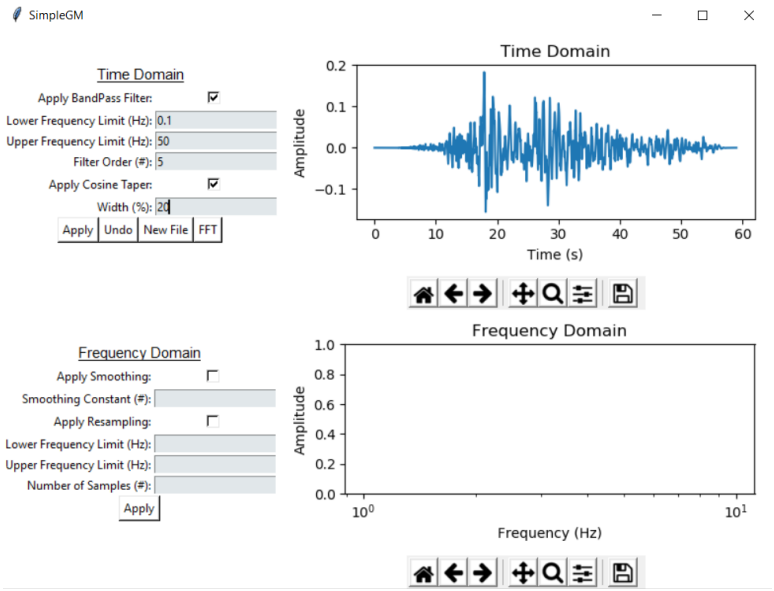
1. Open the command prompt.
2. Create a virtual environment by entering `virtualenv env` and then activating that enviorment with `source env/bin/activate`. Install dependencies pip3 install -r requirements.txt
3. Navigate to the directory containing the file `simplegm.py`.
4. Enter `python simplegm.py` to launch the program using python.
5. The main and folder navigation window will appear, figures of which are shown below.



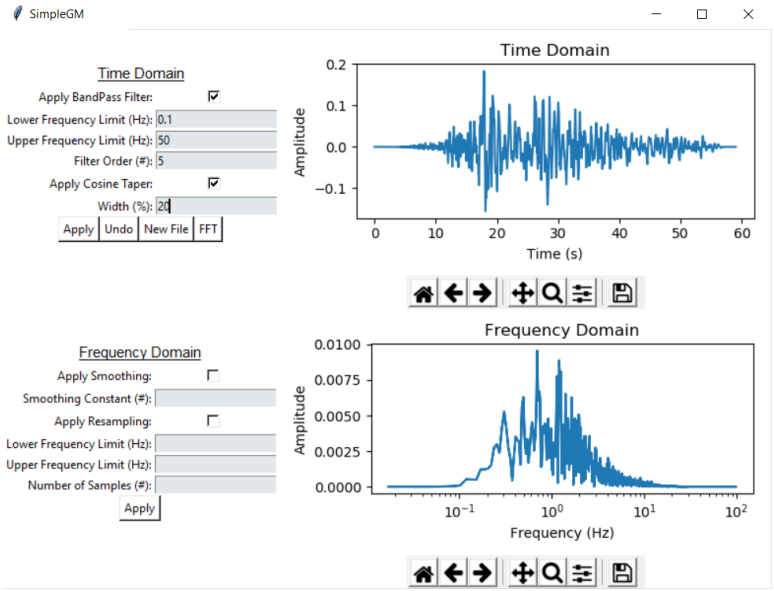
5. Navigate to the folder named `data` included in the repository download. You will see four comma-delimited ground-motion record files. These files are shown in the example navigation window above.
6. Select the `chichi.csv` ground-motion record. The main window will update to appear below.



7. Apply a butter worth filter and cosine taper by editing the dialog boxes on the top left and then pressing `Apply`. To apply a different filter or taper to the time record, press `Undo` to return to the original time record, enter the new settings, and press `Apply`.



8. Perform the Fast-Fourier Transform on the filtered and tapered record by pressing `FFT`.



9. Apply Konno and Ohmachi smoothing and resampling to the Fourier tranform by using the dialog boxes on the bottom left and pressing `Apply`. To apply a different set of value to the Fourier transform, press `FFT` to return to the a clean version of the Fourier transform, enter the new settings, and press `Apply`.