2021 Seismology Skill Building Workshop Final Project & Rubric v0.1

The final assignment for the Skill Building Workshop is to develop a Jupyter Notebook* that showcases what you have learned from this course! It is our intention that this project will provide an opportunity for you to showcase your new skills to prospective graduate advisors and employers. To help you create the notebook, we have developed a suggest set of steps to help guide you as you construct the project. We also have provided a rubric that aligns with these steps and could be used to score your notebook.

- Pick an area of interest, plus a time frame or event(s) of interest
- Describe your motivation for selecting this area or event is of interest. Why does it matter and what do you intend to explore?
- Identify a relevant station(s) with recordings of interest or seismic sequence in an earthquake catalog and annotate the process of how and why you chose the station(s) or seismicity
- Request and download the relevant seismograms or seismicity
- Plot and analyze the seismograms or seismicity
- Consider filters, spectrograms, cross-sections, frequency-magnitude distributions, etc. and describe why you are preforming these steps.
- Generate several plots to illustrate your findings and justify the interpretations you draw from them.
- Describe what you learned from looking at the data as well as what additional questions you have
- Finally, clean up your Jupyter notebook, provide appropriate annotation and comments to ensure someone else can follow along, and be sure that it runs as expected.

If you are struggling to get started… you can always check out the Jupyter Notebooks* that last year's students developed.
https://www.iris.edu/hq/workshops/2020/06/ssb > "Showcase"

Submit your final project at the URL below.

- Title
- Abstract (500 characters or less)
- Notebook file
- Supporting files

https://www.iris.edu/hq/workshops/2021/05/ssb_2 > "Submit Project"

*Note that you are welcome to use tools other than Python for your project (e.g. SAC, GMT, etc.). However, we ask that you document your use of them in the Jupyter Notebook. For example, you could upload your code into a markdown window or as a pdf, and then illustrate the output as images or figures in the notebook as well

Feature	4	3	2	1	0	Score
Motivation What questions are you answering? Why should anyone care**?**	Poses researchable question(s) and clearly explains the significance to intended audience	Poses a potentially researchable question but the significance is somewhat unclear	Poses overly broad or narrow question(s) and provides weak rationale for its significance	Question and significance are very difficult to understand	No motivation present	
Select useful data	Data is appropriate, reliable, and quantity is sufficient for motivation	Data is appropriate and reliable, but quantity collected is insufficient	Data relevant, but there are questions about reliability or appropriateness as other factors could be at play	Data collected is not aligned with the motivation	No data	
Analyze data appropriately	The analysis and results are well aligned with the motivation and reasonable for the project	The analysis and results are aligned with the motivation but limited in extent	The analysis and results are somewhat aligned with the motivation but only yield very limited results	Analysis and results are poorly aligned with the motivation or are mostly absent	No analysis	
Explain why you are doing what you are doing in the notebook	Notebook demonstrates a clear an understanding of the science behind the data analysis used.	Notebook demonstrates a moderate understanding of the science behind the data analysis used.	Notebook demonstrates some understanding of the science behind the data analysis used.	Notebook demonstrates little understanding of the science behind the data analysis used.	Notebook does not demonstrate any understanding of the science behind the data analysis used.	
Design and generate clear visuals	Plots illustrate results, demonstrate interpretation of basic geophysical concepts, and are clearly constructed	Plots illustrate results, but other plots would better support interpretation, and/or are poorly constructed	Plots partially illustrate results, or are difficult to understand	Very few discernible plots are used to illustrate the results	No plots are used to illustrate the results	
Develop efficient and understandable code	Notebook is well documented and other could easily follow along.	Notebook is documented and others could follow along.	Notebook documentation is adequate, but additional details would help others follow along.	Notebook documentation is inadequate for others to follow along.	No notebook documentation is present.	
Develop a functional research product	The notebook runs as expected	At least 80% of the notebook runs (some minor glitches).	50% - 80% of the notebook run correctly. A few revisions are needed to operate as expected.	Less than 50% of the notebook runs. Needs major revisions to operate as expected	None of the notebook runs correctly	
					Total Score	**/28**