i-validate User Guide

i-validate is created by researchers at the National Renewable Energy Laboratory. Its purpose is to validate meteorological time series using the metrics recommended by the International Energy Agency Wind Task 36 group.

i-validate GitHub repo: https://github.com/joejoeyjoseph/nwtc-ivalidate/tree/dev

To run i-validate, first you need to install Python 3 and the required packages listed in `requirements.txt`. If you are new to Python, you can start with online resources such as python.org or Anaconda, and using a virtual environment or a conda environment is recommended.

You also need to clone the GitHub repo to your machine to run it locally. Under the green `code` button on the right side of the GitHub repo, you have the options to clone with HTTPS, access the repo via GitHub Desktop, or download the directory as a ZIP file.

After setting up Python and your local i-validate directory, you need to do two tasks to run i-validate:

1) Edit the `config.yaml`
   a) Specify validation details
      i) `location`, in latitude (`lat`) and longitude (`lon`)
      ii) `window` in `time`, the duration of validation in YYYY-MM-DD HH:MM:SS format
      iii) `metrics`, among the 5 predefined metrics
      iv) `height_agl` in `levels`, meters above ground level
   b) Put data sets in the specified `path`
      i) In the current setup, the data sets used in the demo are not provided in the GitHub repo, so running i-validate without setting up the data paths appropriately will cause errors.

2) Run `/notebooks/demo_notebook.ipynb`
   a) Execute one line of code and the validation results and plots will be generated.

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This documentation was created by Joseph Lee on 2020-07-21