Python Quality Assurance Tools

Unit-Test-Runners

- unittest (standard library)
- pytest - Nowadays the de-facto standard Python unit testing tool (Github)
- nose - Similar to pytest, but less featurefull
- tox - Automates running your tests under several python versions, each in its own virtual environment (see also our academy)

Code Analysis

- pycodestyle (former *pep8*) - checks code formatting and style against PEP-8 coneventions
- pydocstyle - (former *pep257*) - A static code analysis tool for checking compliance with Python docstring conventions (Documentation, Git hub)
- flake8 - Checks formatting, consistency, redundancy, unused code, undefined symbols. Can be extended with plugins
- pylint - checks consistency, redundancy, unused code, undefined symbols, best practices, complexity
- pycycle - Find cyclic imports in Python projects

Code metrics

- mccabe - Code complexity flake8 plugin
- pyroma - Rates how well a Python project complies with the best practices of the Python packaging ecosystem (Bitbucket)
- radon - Compute various metrics (LLOC, complexity, etc.) from source code (Documentation)

Test coverage

- coverage.py - Generates reports on how much of your app's code is touched by your tests

Style Guides

- PEP-8 - Style Guide for Python Code ("Official" Python Style Guide)
- PEP-257 - Docstring Conventions
- Google Python Style Guide - Not everything in here is general consensus, but definitely worth reading and adapting parts of
- Sphinx Parameter Documentation Syntax - How to document function and method parameters in docstrings