Running Taverna Workflows within IPython Notebook

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Project's Web site: http://www.taverna.org.uk/

Source code: https://github.com/myGrid/DataHackLeiden.git

IPython Notebook[1] is a browser-based environment for interactive computing. Users can write, edit and replay Python scripts. IPython Notebook has support for interactive data visualization and report presentation. A Notebook can be saved and shared. Notebooks can be replayed using the same or different data. The record of a notebook "run" can be saved and displayed in a Notebook Viewer[2].

The Taverna Player[3], developed as part of the BioVeL project[4], through its API and the use of iframes enables the running of a workflow within the Taverna Portal[5] to be included as part of another Web site. The Taverna Player has a REST API that allows workflow inputs to be specified, a workflow run started and monitored, and the resultant outputs retrieved.

As part of work enabled by pro-iBiosphere[6], the Taverna Player Client package[7] was developed for Python. This Client may be used to run workflows within an IPython Notebook; data can be passed from the Notebook as inputs to Taverna workflows to be executed, and results retrieved from the run back into the Notebook. Using Taverna's interaction service, the workflow run can be steered within the Notebook browser window. Reports can be generated for workflow runs using jinja2[8] templates.

The Taverna Player Client package is released in the PyPi registry[9] and has been used to orchestrate the running of BioVeL workflows for data refining and ecological niche modelling.

In this talk, an overview of the capabilities of IPython Notebook is given, the REST API to Taverna Player is described and the use of the Taverna Player Client package are demonstrated.

This work was enabled by BioVeL, a project (Grant no. 283359) funded by the European Commission 7th Framework Programme (FP7) as part of its e-Infrastructures activity, and by the Software Sustainability Institute supported by the UK Engineering and Physical Sciences Research Council (EPSRC) through grant EP/H043160/1

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1 http://ipython.org/index.html
2 http://nbviewer.ipython.org/
3 https://github.com/myGrid/taverna-player
4 http://www.biovel.eu/
5 https://portal.biovel.eu/
6 http://www.pro-ibiosphere.eu/
7 https://github.com/myGrid/DataHackLeiden
8 http://jinja.pocoo.org/
9 https://pypi.python.org/pypi/tavernaPlayerClient