

SLF Python programming workshop

Mathijs de Bruin

January 7, 8 and 9, 2014

1 Schedule

Date	Time	Activity	Room
Tuesday, January 7	10:00 - 12:00	Opening lecture	Hörsaal
	12:00 - 13:00	Lunch	
	13:00 - 18:00	Workshop	C157
Wednesday, January 8	10:00 - 12:00	Available for questions	C157
	12:00 - 13:00	Lunch	
	13:00 - 14:30	Lecture	C157
	14:30 - 14:50	Break	
	14:50 - 18:00	Workshop	C157
Thursday, January 9	9:30 - 11:00	Lecture	Hörsaal
	11:00 - 12:00	Available for questions	B125
	12:00 - 13:00	Lunch	
	13:00 - 18:00	Workshop	B125

2 Program

2.1 Day 1

Python distributions, Shell/CLI and Python debugging

1. Introduction and overview
2. Inventarisation of common problems
3. Scientific Python distributions
4. Bash shell/Command Line Interface
5. Python shell, IPython, debugging
6. Installing and managing packages, PyPI
7. Taming your text editor

2.2 Day 2

Best practises and modular design

1. Typical gotchas; weak references, immutables
2. Best practises
 - Classes, methods and functions; use them!
 - Code formatting; PEP8
 - Don't repeat yourself; DRY
 - Organizing your code; minimize globals, cleanout imports
 - Comments, docstrings, documentation
3. Structuring code, working with modules
4. Packaging, creating reusable code

2.3 Day 3

Version control, project structure

1. Version control; what, how and why?
2. GIT concepts
 - Branches
 - Commits
 - Forks
 - Merges
 - Hashes
3. Setting up an example project
4. Sharing code (Bitbucket, GitHub)
5. Forking and pull requests