

NORDAGGLE

PRESENTS...

Introduction to Python Workshop

Caroline Harbitz & Gina Schmalzle

NORDAGGLE- WHAT IS IT?

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Created by Schmalzle, Gina, last modified just a moment ago

Welcome to the Nordaggle Confluence Page – the go-to place for all things Nordaggle!

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ORGANIZATIONAL COMMITTEE NOTES

Have a question or want to contribute?
Contact [@Schmalzle, Gina](#) for more information

Primary purpose -- increase communication about data topics

Nordaggle – spin off from Kaggle

We host

1. Fortnightly meetings to talk about data topics and problems
2. Workshops
3. Competitions (not yet offered)

<https://confluence.nordstrom.net/display/PER/Nordaggle>

SPECIAL THANKS

Melissa Haklitch – logistics extraordinaire 😊

Jason Gowans and the Data Lab – Food and Drink

Heidi Whiting and James Pestrak – python/pip
installation

Our TA's!

SPECIAL THANKS

You!

- 212 Officially Signed Up
- 105 Beginner, 81 Intermediate and 22 Expert Programmers (4 no response)



python

workshop!

Gina Schmalzle & Caroline Harbitz

Workshop outline

- * Part 1: Jupyter & Python overview
- * Part 2: Data types
- * Part 3: Control structures
- * Part 4: Functions
- * Part 5: Reading and writing data

We have one rule

Ask for help!

Part 1: Jupyter & Python

Outline:

- * Some history
- * What is Python?
- * What's an interpreter? A shell? A script?
- * What is Jupyter?
- * Basic commands

Python history

- * Created in 1990 by the BDFL
- * It's not named after snakes
- * Pretty unpopular until 2.0 was released in 2000
- * 3.0 was released in 2008
 - * Backwards incompatibility issues
 - * Updated scoping rules
 - * Different string encoding

We're using v2.7 for this workshop

Programming elements

- * A **program** or **script** is a sequence of commands
- * These sequences are evaluated and executed by the Python interpreter in a **shell**
- * A **command** or **statement** is an instruction for the interpreter

Jupyter Notebook

Web apps that contain both:

- * computer code (support for > 40 languages)
- * rich text elements (images, videos, JavaScript, etc.)

To start a notebook server from your terminal:

```
$ jupyter notebook
```

\$, >>>, ???

Command types:

- * Terminal: \$

\$ jupyter notebook

- * Python: >>>

>>> 5 + 5

Basic Python Operations

Variable assignment:

```
6 + 5 == 11
True
1 + 1 == 3
False
```

Tests:

```
a = 'nordstrom'
print a
'nordstrom'
```

Math:

```
3 + 2
5
```

```
6.0 * 2
12.0
```

```
10 - 5
5
```

```
3 / 2
1
```

```
3 / 2.0
1.5
```

```
4 ** 2
16
```

Part 2: Data types

- * Built-in data types
- * What's a dictionary? A list? A tuple?
- * Indexing and slicing

What Next?

Write a python script. For example:

- * Create a file named example.py (note the .py extension)
- * In example.py write some Python code (e.g.: `print("Hello world!")`), save, and close.
- * To run the script, At the command line type:
 - * `python example.py`

What Next?

- * Use the ipython interactive shell

For example:

- * At the command line type: `ipython`
- * Start writing python code like you did with notebooks

What Next?

Try the final projects!

- * `python_5_final_project.ipynb`
- * `python_6_final_project_with_pandas.ipynb`

What Next?

- * Think up your own project.
- * Tips:
 - * The Python docs, Google, and Stack Overflow are your friends
 - * Use print statements to troubleshoot
 - * Try using a debugger
 - * <https://wiki.python.org/moin/PythonDebuggingTools>