

NPTEL MOOC

PROGRAMMING, DATA STRUCTURES AND ALGORITHMS IN PYTHON

Week 1, Lecture 4

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Installing Python

- * Python is available on all platforms: Linux, MacOS and Windows
- * Two main flavours of Python
 - * Python 2.7
 - * Python 3+ (currently 3.5.x)
- * We will work with Python 3+

Python 2.7 vs Python 3

- * Python 2.7 is a “static” older version
 - * Many libraries for scientific and statistical computing are still in Python 2.7, hence still “alive”
- * Python 3 is mostly identical to Python 2.7
 - * Designed to better incorporate new features
 - * Will highlight some differences as we go along

Downloading Python 3.5

- * Any Python 3 version should be fine, but the latest is 3.5.x
- * On Linux, it should normally be installed by default, else use the package manager
- * For MacOS and Windows, download and install from <https://www.python.org/downloads/release/python-350/>
- * If you have problems installing Python, search online or ask someone!

Interpreters vs compilers

- * Programming languages are “high level”, for humans to understand
- * Computers need “lower level” instructions
- * Compiler: Translates high level programming language to machine level instructions, generates “executable” code
- * Interpreter: Itself a program that runs and directly “understands” high level programming language

Python interpreter

- * Python is basically an interpreted language
 - * Load the Python interpreter
 - * Send Python commands to the interpreter to be executed
 - * Easy to interactively explore language features
 - * Can load complex programs from files
 - * `>>> from filename import *`

Practical demo

Some resources

- * The online Python tutorial is a good place to start:
<https://docs.python.org/3/tutorial/index.html>
- * Here are some books, again available online:
 - * *Dive into Python 3*, Mark Pilgrim
<http://www.diveintopython3.net/>
 - * *Think Python*, 2nd Edition, Allen B. Downey
<http://greenteapress.com/wp/think-python-2e/>

Learning programming

- * Programming cannot be learnt theoretically
- * Must write and execute your code to fully appreciate the subject
- * Python syntax is light and is relatively easy to learn
- * Go for it!