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!

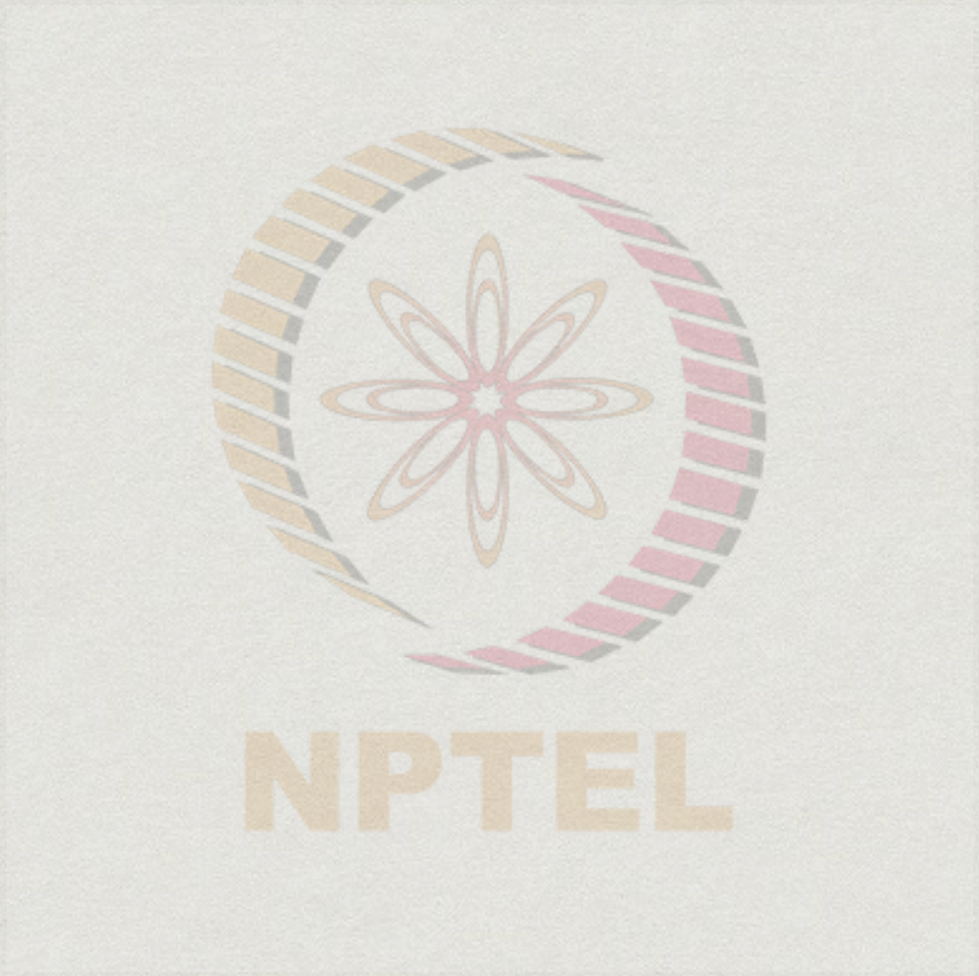
Interpreters vs compilers

- 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!