Introduction to Python 2

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History of Python

Python vs C

- Python
- shorter learning curve
- automatic memory management

Type

- Numeric
  - int
  - long
  - float
  - complex
- Sequence
  - str
  - list
  - tuple
  - ...
- Dict
- Set

Useful function

- type()
- dir()
- max() 1 or 2
- min() 1 or 2
- print
- range

- **
- %
- int()
- float()
- str()

Law of sequence types

- Law 1:
- Law 2:
- Law 3:
- Law 4:

Str

- mapping between key and value
- add & update
- remove
- trick

List

- mapping between key and value
- add & update
- remove
- trick
  - negative indexing

Tuple

- feature
- reason
- method

Exercise 1

Dict

- immutable
- mapping between key and value
- add & update
- remove
- trick
  - zip

Set

Exercise 2

Functions

Python’s lambda creates anonymous functions

Exercise 3

Functions

```
def fun(a, b):
    while a != 0:
        a = b%a
    return b
```

Python’s lambda creates anonymous functions

Functions

- Indentation
- All pass by reference -> everything is sync

Functions

- All pass by reference -> everything is sync
- Multiple file

Modules

- Import *moduleName*
  - *e.g., import moduleFun*
  - *moduleFun.fun*
- *import moduleFun as MF*
- *from moduleFun import fun1 as f_1*

Modules

- *import moduleFun as MF*
- *from moduleFun.submoduleFun import fun1 as f_1*

Common modules

- math
  - sqrt
- sys
  - argv

- pip install

Exercise 4

if while do loop logical expr

if while do loop

- enumerate

break continue

- break
  - leave
- continue
  - jump to next iteration

File I/O

- fh=open(filename,'?')
- fh.close()
- fh.readlines()
  - once for all
  - return lines, seperate by txt 'line'
- for line in fh:
  - line return each 'line' in txt
  - line.strip()

Exercise 5

debugging

code:

1)try:

except:

2)assert

debugger

- pdg

profiling

profiling

numpy & matplotlib

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numpy & matplotlib

ipython notebook

thanks