05.Python.Functions

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Outline

- Objectives
- What are functions?
- In built functions
- User defined functions
- Arguments in functions
- Q&A
- Gist of the day

Objectives

- Understand what functions do
- Understand the anatomy of functions
- Recognize functions vs methods
- Know how to define your own functions

What are functions?

- Functions are mini programs
- They make carrying some tasks easy
- They are resuable code
- There are in built function some of which we have seen already
  - print()
  - type()
  - len()
  - enumerate()
  - range()

- You can define your own functions
- Anatomy of a function

```
function(arg1, arg2, ... argx)
```

In built functions

- Type casting
  - int()
  - list()
  - dict()
  - set()
  - str()
- Mathematical
  - min()
  - max()
  - sum()
  - round()
- String
  - min()
  - max()

In built functions (contd)

- useful functions
  - dir()
  - help()
- Some functions we will consder in the future
  - reversed()
  - sorted()
  - filter()
  - map()

User defined functions

- You can write your own functions

- All you have do is understand the anatomy of functions
- Next step is literarily to define a function

```
def my_function():
    'do something'
```

- Finally call the function

```
my_function()
```

Outputing explicitly or implicitly (returning)

```
def my_function():
    print("Hello world")

def another_function():
    return "hello world"

a = my_function()

b = another_function()

print(a)
print(b)
```

Arguments in functions

- You can have functions with argument(s)
- You can set defaults for the argument(s)
- Arguments can be of any type or types
- Arguments can be collections
- Arguments that are collections offer some level of flexibility
- Artgument types can be combined along with collections

Function arguments

```
#No arguments
def first_function():
    return "Hello world"

#one argument
def second_function(arg):
    return arg

#two arguments
def third_function(arg1, arg2):
    return arg1 + arg2
```

```python
#list or tuple as argument
def forth_function(*args):
    print(args)
    return len(args)

#dictionary as argument
def fifth_function(**args):
    print(args)
    return len(args)
```

Gist for the day

- Get the pdf version
- Get the gist
- The Jupyter Notebook will be shared

Q&A

Thanks for your contributions!