

PPL Lab 2:

Import, first order functions, docstrings, math functions.

Using Import

- ◆ Before we can use certain modules/functions – we need to import them
- ◆ Use “import __” statement in the top part of your program
- ◆ For example, to use math functions you need to declare:

import math

- ◆ If you don't need the whole lib, you can import specific functions:

from math import sqrt

Using Import

- ◆ You can also import several functions:

```
from math import sqrt,log
```

- ◆ Full math lib doc can be found here:

<https://docs.python.org/3/library/math.html>

String Formatting

- ◆ You can create a string out of texts and variables.
- ◆ If we want to print the results in a specific format:
`print('sqrt of {0} = {1}'.format(n,math.sqrt(n)))`
- ◆ Or we can print in the following way: `print("x=",x)`
- ◆ If $n=4$, this prints: sqrt of 4 = 2
- ◆ Note that both double quotes – “ and single quote ‘ are allowed.
But be consistent!

Simple functions

◆ To define a function in python we use the def keyword

◆ Usage:

```
def plus(a, b):
```

```
    return a+b
```

◆ Need to double press enter to exit

First-order Functions

- ◇ Simple functions which accept data as arguments and return data.

- ◇ You can define a function using the “def” statement.

```
def FunctionName():
```

```
    <body>
```

- ◇ Note the indentation at the newline – here comes the code. Use 4 spaces for indentation or Tab.

- ◇ It's possible to nest a function inside another function!

```
def func1(x):
```

```
    def power2(x):
```

```
        return x*x
```

- ◇

```
    return power2(x)*3
```


Docstrings

- ◆ It is always recommended to document your code!
- ◆ Single line comments (not docstring) start with “#”
- ◆ Triple quotes are used for multi-line docstrings:
 `"""these are my comments`
 These too
- ◆ `"""`
- ◆ You should always add docstrings inside a new function and whenever you implement an algorithm – so that another programmer can understand your intentions.