

# Report number 2: Python Guide

MAROUANE BENHASSI

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## Abstract

This document provides a comprehensive list of Python3 commands, tailored towards students and individuals who are already familiar with other programming languages. It assumes a basic knowledge of programming concepts and does not cover topics from scratch. Instead, it offers equivalents of commands in other programming languages, allowing for a smooth transition into Python. Whether you are a seasoned programmer looking to expand your skillset or a student learning to code, this document is an essential resource for mastering Python.

In this report, we utilized Emacs as our primary code editor and wrote our Python code between two horizontal lines in the relevant sections.

To compile the code, the procedure is simple: write the code in Emacs, save the file with a .py extension, and open a terminal in the same directory as the file. Then, type the command "python3" followed by the name of your file to execute the code.

## 1 First program

First program:

```
print("Hello world!")
```

## 2 Comments

Comments:

```
# This is an example of comments in Python
```

## 3 Variables

Declaration of variables (x and c):

```
x = 3.14  
c = "hello"
```

## 4 Format Write

To choose the how many number after coma, use:

```
x = 3.14159753465987123
print("x is equal to : {:.3f}".format(x))
```

The results is:

```
3.141
```

## 5 lists

We define the lists in Python as:

```
List = [5 , 2.5 , 1.75 , 0.15]
```

To print the list, we write its name like:

```
List
```

We can also call a specific element in the list like:

```
List[0]
```

The number of elements of a list:

```
len(name of the list)
```

## 6 For loop

```
for i in range(5):
    print(i)
```

This code give as a results:

```
0
1
2
3
4
```

## 7 While loop

This is the command to use it:

---

```
i = 0
while i <= 3:
    print(i)
    i = i + 1
```

---

The result is:

---

```
0
1
2
3
```

---

## 8 Tests

To test an hypothesis we use the command:

---

```
x = 2
if x == 2 :
    print("x is equal to 2")
elif x == 3 :
    print("x is equal to 3")
else :
    print("x is different to 2 and 3")
```

---

## 9 Files: read and write

This is the code to read a txt file:

---

```
with open ("data.txt", "r") as filin :
    for variable in filin :
        print(float(variable))
```

---

This is the code to write a txt file:

---

```
with open ("data.txt" , "w") as filout :
    for i in range(10) :
        filout.write("{}\n".format(i))
```

---

## 10 Functions

This is an exmaple of fuction declaration :

---

```
def func(x,y) :  
    return x**y  
  
print("4 to the 2 is equal to", func(4,2))
```

---

## 11 Librerries

This code called library.it shows how to create a librery :

---

```
""" Example how to create librerries """  
  
CSTE = 125.991  
  
def func1(x,y):  
    """ function sum """  
    return x + y  
  
def func2(t):  
    """ square function """  
    return t**2
```

---

Usage:

---

```
import library  
library.CSTE  
library.func1(2,3)  
library.func2(3)
```

---

## 12 Resume

The end