





# Mentoring Program

Python





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Python is an interpreted, high-level, general-purpose, object-oriented programming language.

It is well known for its simple syntax, which brought him very close to normal human speech, and for its large community.



## Python use cases

Ol Cybersecurity O3 Web scraping O5 Scripting / automation

02 Web development 04 IA 06 Software development







- Web application attacks
- Network scanning
- Penetration testing
- Developing exploits
- Digital forensics



### Life cycle of a python program

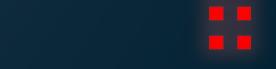
Source Code

**→** 

Byte Code

**→** 

Runtime







### **Imports**

import os, time
from math import cos

#### **Functions**

def add(x,y):
 return x+y

def sub(x,y):
 return x-y

### Main program

x = 2
y = 3
print(add(x,y))





## **Python Setup**

- Linux: You probably already have python installed.
- Windows:
  - Download from : https://www.python.org/downloads/
  - o Follow the instructions and make sure to check the add to path option.
  - Download pip from : https://bootstrap.pypa.io/get-pip.py
  - o Run python3 on the downloaded file.
- You can use whatever IDE or Text editor you like





#### Hello world

- Create a file called hello.py
- Open the file using your editor or IDE
- Write: print("hello Mentoring program")
- Save the file.
- Go to the terminal (where you have created the file) and type: python3
  hello.py







### **Variables**



- In python, variables are defined the moment that a value has been assigned to them
- The type of the variable is determined by its content
- Everything is an object





### Data types

- Integers : var = 4
- Float : var = 4.5
- String: var = "This is a string" or var = 'This is a string'
- Boolean: var = True or var = False
- List: var = [2, "string", True, 5.4, ["a"]]
- Dictionary: var = {key: value}





### Input



- You can read user input from stdin using the function: input()
- The result of input will be a string
- You can write something before reading the input by providing a string as an argument to the input function: input("Name: ") → Name:





## **Challenge 1**

Read the user name and age and then print: "Welcome, user\_name. You were born in year\_of\_birth."





## Loops



## For loops (1/2)

```
for i in range(start, end, step):
    # do some stuff here

# default start = 0
# default step = 1
# the condition is : i < end</pre>
```





## For loops (2/2)

```
shellsec_members = ["ouxs", "chenx3n", "hfz", "m0kr4n3", "habs", "haithem"]
for member in shellsec_members :
    print(member)
```





## While loop

```
while condition :
    # do things

i = 0
while i < 10 :
    print(i)
    i+=1</pre>
```





## Challenge 2

Decode the flag



## Conditional statement



#### If statement

```
if condition :
    # do stuff
elif second condition :
    # do other stuff
elif third condition :
    # do other other stuff
else :
    # do the left stuff
```



## **Conditional operators**

- Greater than:x>y
- Lower than: x < y</li>
- Equal: x == y
- Great or equal / lower or equal : x >= y / x <= y</li>
- Different : x != y
- And: X and Y
- Or:X or Y
- Not: not X
- Include: x in y





## Challenge 3

Decrypt the flag (it's caesar cipher, rot13)



## **Functions**



#### **Functions**

```
def function_name(arg1, arg2, arg3):
    # do some actions here
    # return something if necessary

# to call a function
function_name(arg1, arg2, arg3)
```





# 06. Bonus







## Resources

#### **01** Books

 https://olinux.net/wp-content/uploads/201 9/01/python.pdf







# Time for questions

