

# Programmation en Python

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# modules - librairies

modules, librairies: fichiers regroupant d'autres fonctions

```
>>> import math
>>> sqrt(5)
Traceback (most recent call last):
  File "/usr/lib/python3.8/idlelib/run.py", line 55
    exec(code, self.locals)
  File "<pyshell#1>", line 1, in <module>
NameError: name 'sqrt' is not defined
>>> math.sqrt(5)
2.23606797749979
>>>
```

# modules - librairies

```
>>> from math import sqrt
>>> sqrt(5)
2.23606797749979
>>> |
```

```
>>> from math import *
>>> sqrt(5)
2.23606797749979
>>> |
```

`import math`

pas de conflit avec d'autres éventuelles fonctions de même nom

# Portée des variables: exemple

```
def ask_name():
    name = input("Quel est votre nom? ")

def hello():
    ask_name()
    print("hello", name)
```

hello()

IDLE Shell 3.8.10

File Edit Shell Debug Options Window Help

Python 3.8.10 (default, May 26 2023, 14:05:08)

[GCC 9.4.0] on linux

Type "help", "copyright", "credits" or "license()" for more information.

>>>

= RESTART: /home/anne/Documents/CFA-CCIAvignon/2023-2024/PYTHON/TP/PREP/hello.py

Quel est votre nom? Anne

Traceback (most recent call last):

File "/usr/lib/python3.8/idlelib/run.py", line 559, in runcode

exec(code, self.locals)

File "/home/anne/Documents/CFA-CCIAvignon/2023-2024/PYTHON/TP/PREP/hello.py", line 9, in <module>

hello()

File "/home/anne/Documents/CFA-CCIAvignon/2023-2024/PYTHON/TP/PREP/hello.py", line 7, in hello

print("hello", name)

NameError: name 'name' is not defined

>>>

# variable globale

```
name = input("Quel est votre nom? ")
```

```
def hello():  
    print("hello", name)
```

```
hello()
```

IDLE Shell 3.8.10

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>>>

= RESTART: /home/anne/Documents/CFA-CCIAvignon/2023-2024  
pe.py

Quel est votre nom? Anne

hello Anne

>>> |

Utilisation d'une variable globale dans une fonction: à éviter!

# variable locale

```
def ask_name():  
    return input("Quel est votre nom? ")  
  
def hello(name):  
    print("hello", name)  
  
user = ask_name()  
hello(user)
```

IDLE Shell 3.8.10

File Edit Shell Debug Options Window Help

Python 3.8.10 (default, May 26 2023, 14:05:08)

[GCC 9.4.0] on linux

Type "help", "copyright", "credits" or "license()" for more

>>>

= RESTART: /home/anne/Documents/CFA-CCIAvignon/2023-2024/pe.py

Quel est votre nom? Anne

hello Anne

>>> |

# variable locale

```
def hello(name):  
    print("hello", name)  
  
name = 'Alice'  
hello('Bob')
```

# variable locale

```
def hello(name):  
    print("hello", name)  
  
name = 'Alice'  
hello('Bob')
```

la fonction hello est appelée avec l'argument Bob



# type bool

True

False

# type bool

```
def is_even(n):  
    if n % 2 == 0:  
        return True  
    else:  
        return False  
  
x = int(input("valeur de x: "))  
if is_even(x):  
    print(f"{x} is even")  
else:  
    print(f"{x} is odd")
```

## type bool

```
def is_even(n):  
    return n % 2 == 0  
  
x = int(input("valeur de x: "))  
print(f"{x} is even: {is_even(x)}")  
|
```

# while True

redemander à l'utilisateur jusqu'à obtenir type de réponse attendue

exemple: on attend un nombre positif

```
def input_positive_int():  
    while True:  
        n = int(input("entrer un nombre positif: "))  
        if n >= 0:  
            return n  
        else:  
            print("Ce nombre n'est pas positif")  
  
n = input_positive_int()  
print(f"n vaut {n}")
```

# match case

```
fruit = input("Quel est votre fruit? : ")  
  
match fruit:  
    case "pomme" | "poire" | "raisin" :  
        print("c'est un fruit d'automne")  
    case "abricot":  
        print("c'est un fruit d'été")  
    case "mandarine":  
        print("c'est un fruit d'hiver")  
    case _:  
        print("fruit inconnu")
```