

University of Mohamed Kheider -Biskra

Faculty of *Science* and Technology
Common Core in Science and Technology
Course : **Computer Science 2**



Academic Year: **2024/2025**
Level: **1st Year**
Duration : **3 sessions**

PW Series No. 7: Functions and Procedures

Exercise 1:

1. Write a Python function that calculates and displays the sum of two numbers. Call this function in the main code.
2. Modify the same function to **return** the sum instead of displaying it.

Exercise 2:

Write a Python function that returns **True** if a given number is even and **False** if the number is odd. In the main code, test the function to verify its correctness.

Exercise 3:

Write a Python program that searches for a number provided by the user if it exist or not in a given array T. Call this function in the main code.

```
T = [11, 13, 15, 14, 5, 11]
```

Exercise 4:

1. Write a Python function Prime_Number that checks whether an integer N is prime or not.
2. Use the Prime_Number function into a complete Python program that **reads a matrix A**(n×m) of integer type and calculates and displays the total number of prime numbers present in the matrix A.

Exercise 5:

1. Write a Python program that fills a 1D array with integers provided by the user.
2. Write a Python program that fills a 2D array with integers provided by the user.

Exercise 6:

```
def modify_list(lst):
    lst.append(4)

def modify_int(num):
    num += 1

# Example with a list
my_list = [1, 2, 3]
print("Before modification:", my_list)
modify_list(my_list)
print("After modification:", my_list)

# Example with an integer
my_int = 10
print("Before modification:", my_int)
modify_int(my_int)
print("After modification:", my_int)
```

Questions :

1. What is the expected output of the code?
2. Explain the behavior observed when passing a list to the `modify_list` function. Does it behave like pass-by-value or pass-by-reference?
3. Discuss the behavior observed when passing an integer to the `modify_int` function. Does it behave like pass-by-value or pass-by-reference?
4. Explain why the behavior differs between passing a list and an integer.