

Cover the inside!

Target:

- **Learn about:**
 - Python data types and operators
 - Types of data structure in python
 - Control flow (Conditional statements – loops)

Notes:

- **Solve the problems in the next page and try to make use of your beautiful brain before looking everything up.**
- **Send a compressed file named “Task 6 – Your full name” with the following data:**
 1. A Task 6 - Your full name.py file that contains all your solutions to the problems.
 2. A three-minute or less video of you explaining your code.
- **Make sure the size of compressed file does not exceed 25Mb.**

// Do not hesitate to ask whatever question you want whether to understand a problem or to get a hint, we are here to help!

Evaluation:

1 to 9 Problems → 6 points

Video → 4 points

Recommended resources

- 1- [Mastering Python](#) by Nour [Arabic crash course – Watch till 02:23:00 only]
- 2- All-time favorite python [course](#) [English crash course]
- 3- [Udacity](#) Python course [English – Watch till lesson 4 only - **Recommended**]
- 4- [W3Schools](#) [For revision if you already have previous knowledge]

Deadline:

3 days // Saturday - FEB 3th 2024 at 23:59

Problems:

1. Write a program that asks a user for a number n and prints the sum of the numbers from 1 to n

```
# input = 5 → 15
```

2. Write a program to find the second largest and second smallest number in a list. [Do not use any built-in functions]

3. You are given a list of integers, print the index of the two numbers that add up to a target number given.

```
# input = [1,4,5,6] , target = 5 → 0,1
```

4. Given a list of strings, create two lists, the first one has the half of each string, the other list contains the other half of the strings.

```
# input = ["apple","Maid"] → ["app","Ma"] + ["le","id"]
```

5. Find the **minimum** distance between the same numbers in a list

```
# input = [2, 5, 3, 4, 5 , 2] → 3
```

Explanation: distance(5,5) = 3, distance(2,2) = 5

6. What is the output of the following code? Why?

- a. z = 200 / 100
- b. k = (1.1 + 2.2 != 3.3)
- c. y = k and isinstance(z, int)

7. What is the output of the following code? Why?

- a. print(round(6.5)-round(3.5) == 3)

8. Find the factorial of a given number using while loop.

```
# Enter the number: 3      The factorial of "3" is "6"
```

9. break while loop if the input equals “q”

```
# Enter 'q' to quit: hi → You entered: hi  
# Enter 'q' to quit: hello → You entered: hello  
# Enter 'q' to quit: q → Loop exited!
```