O1 IBE151 10/12/19

Read two floating point numbers and print the quotient (quantity produced by the division of two numbers).

Note: in this exercise you can't use Python built-in functions such as: min, max, sort, sum, etc.

Input The user will enter 2 floating point numbers.

Output Print a floating point number that is the result of dividing the first by the second number

Input sample	Output sample
0.0 1.0	0.0
100.0 200.0	0.5

O2 IBE151 10/12/19

Read an integer value, which is the duration in seconds of a certain event, and inform it expressed in

hours:minutes:seconds. Note: in this exercise you can't use Python built-in functions such as: min, max, sort, sum, etc.

Input an integer N, the total duration in seconds.

Output Print the read time converted in hours:minutes:seconds like the following example.

Input sample	Output sample
556	0.0
140153	38:55:53
1	0:0:1

O3 IBE151 10/12/19

Write a function that receives 3 integer values A, B and C as parameters and returns True if either the sum of the A plus B is lower than C or C is even, and False otherwise.

Input The function receives 3 integer values as parameters.

Returns True if either the sum of the first 2 numbers is lower than the third, or the third is an even number, and False otherwise.

Input sample	Output sample
1, 2, 3	False
-124, -18, 10	True

O7 IBE151 10/12/19

Write a function that receives a list of numbers and a number as parameters and returns the index where the number appears in the list, or -1 if the number is not in the list. Note: in this exercise you can't use Python builtin functions such as: min, max, sort, sum, etc.

Input The function receives 2 parameters: an array of numbers (a list) and a number.

Returns the index (position) where the number appears in the list, or -1 if it is not in the list

Input sample	Output sample
[1, 2, 3, 4, 5], 3	2
[-124, -18, 0], 1.1	-1

O2 IBE151 3/2/20

Write a function to convert kilograms to pounds. The function receives a float as parameter that represents

weight in kilograms(kg) and returns the equivalent in pounds(lbs).

Assume that 1 kilogram(kg) equals 2.2 pounds (lbs).

Parameter A float number (the weight in kilograms(kg))

Returns The equivalent in pounds(lbs).

Input	Returns
2	4.4
0.1	0.22000000000000003

O5 IBE151 3/2/20

Write a function that receives 3 integer positive values A, B, C as parameters (the length of the sides of a triangle). The functions prints the classification of the triangle according to the following rules:

The lengths of any two sides of a triangle must add up to more than the length of the third side. This means that you cannot draw a triangle that has side lengths 2, 7 and 12, for instance, since 2 + 7 is less than 12 (first triangle inequality theorem). Thus, if any two sides do not add up to more than the length of the third side, print "Not a triangle"

otherwise, if A and B and C are equal, print "Equilateral triangle"

otherwise, if any two sides are equal, but different than the third, print "Isosceles triangle"

otherwise, If all three values are different, print "Scalene triangle"

Input	Output
2, 7, 12	Not a triangle
3, 3, 3	Equilateral triangle
12, 7, 12	Isosceles triangle
10, 5, 9	Scalene triangle

O1 8/12/20

A user from Europe has just arrived to the USA and is getting confused because distance measurements are informed in miles instead of meters. Write a program that asks the user to enter the distance in miles (as "Enter the distance in miles:") and prints "The distance in meters is:" and in the next line prints the corresponding value in meters, as the following example shows:

Enter the distance in miles: 1

The distance in meters is: 1609.344 m

Input A number

Output A number, corresponding to the input distance in meters. The measurement unit (m) should be printed. You don't need to worry about the number of decimal digits on the result (that is, no rounding, etc is required).

Input	Output
10	16093.44 m
0.5	804.672 m

O2 8/12/20

Write a function isPosDiv() that receives an integer parameter and returns True if the number is divisible by 10 and positive, and False otherwise.

Parameters: an integer

Returns true or false

Input	Output
10	True
-1	False
5	False

O1 02/03/22

In this exercise you will write a program that operates on a list. In order to test it, you will start by creating a list, how-ever, the program should be correct when executed on any arbitrary list that meets the following requirements:

• it contains at least 5 elements,

• the number 9362 is an element of the list.

Write a program that:

a. Creates the list ids containing at least 5 elements including the number 9362.

b. Insert your exam candidate number in the list in the position immedi-ately after 9362.

c. Remove the last element from the list.

O2 02/03/22

Mary must decide between 2 boys. Both have their own strengths and weaknesses, and she cannot make her mind. She left the decision to the daisy flower game: she will alternatively speak the number of the boy 1 and 2 while picking one petal of the flower for each num-ber. The number spoken on picking the last petal is the winner wooer. But she doesn't want to destroy a daisy, and she knows you can help.

Write a function that receives the number of petals (a positive in-teger) in a daisy and returns the number that would be spoken while picking off the last petal (1 or 2).

Sample argument: Sample return:

1   1

20   2

O3 02/03/22

You are given a page with a unique paragraph. A secret message is hidden in this paragraph. Someone sends you a list with 3 pairs of numbers. You realize that each number correspond to a position in the paragraph you were given: the first number in each pair is the start of a text fragment and the second is its end. In order to read the secret message, you must concatenate the 3 text fragments delim-ited by the pairs of numbers.

Write a function that, given a paragraph and a list of 3 pairs of valid positions in the paragraph (as lists of 2 integers), returns the secret message.

Header:

        def secret(paragraph: str, pairs: list) -> str:

Sample arguments: "Batman will try", [[0,0], [4, 4], [9,10]]

Sample return: "Ball"

Sample arguments: "Snow or chocolate is the question", [[1,3], [17,20], [13,16]]

Sample return: "now is late"

O4 02/03/22

You are organizing a kayak trip activity for a group of students and have a restricted budget. The guide charges 100 NOK for a group of up to 5 peo-ple, 120 NOK for a group from 6 up to 10 people and 130 NOK for a group of more than 10 people. Kayaks must be rented for the day. Double kayaks cost 20 NOK and single kayaks cost 15 NOK. You do not need to rent a kayak for the guide. A lunch must be purchased for each visitor (guide not included) at a price of 5 NOK each.

Write a function that given the budget and the number of participants in the activity returns True if the budget is enough and False otherwise. As-sume that a maximum of one single kayak will be rented if needed.

Header:

def budget_OK(budget: int, participants: int) -> bool:

Sample arguments:	Sample return:
0, 1	False
500, 2	True
300, 11	True
299, 11	False

O2 10/02/21

Write a function that receives as parameter the number of days passed since the first day in a year (first day is day 0) and returns the number of the week. This function must not accept a value for the number of days received as parameter that doesn't satisfy the requirements: only non negative integer numbers smaller than 366 can be accepted. If the function receives as parameter an invalid value, it must return -1

Parameters The days, a non negative integer lower than 366 (first day in the year is day 0)

Returns The number of the week (first week is 1).

Input	Output
0	1
7	2
3	1
29	5
-56	1

O2 9/02/22

Consider the following two Python codea:

1.

```
L1 = [1,2,3]

L2 = [3,2,1]

L3 = [1,3,2]

s = {L1, L2, L3}
```

2.

```
L1 = (1,2,3)

L2 = (3,2,1)

L3 = (1,3,2)

s = {L1, L2, L3}
```

Explain in not more than 2 lines why code 1 does not work and code 2 does work.

O4 13/12/21

4) Consider the following Python code:

```python
def something (L:list, x: int) -> int:
        x = x + 1
        L.insert(0,x)
        return len(L)

x = 4
T = [2, 4, 8]
y = something(T,x)
```

4.1) What are the values of x, y, T and L after the last line of code?

4.2) Explain, in no more than 3 lines, why the value of x was not modified but the value of T was.

O5 13/12/21

A device measures the speed of cars running along a road with 3 lanes.
Any speed is allowed in lane 1. The maximum speed in lane 3 is 70 Km per hour and it has no minimum speed. In lane 2 the cars must run in speeds in the interval (60, 100).
Write a Python program that asks the user to enter a lane number and a speed and prints in the screen if the car is running according to the rules or not.
You may use a single if with logical operators or nested ifs.

Examples:
Enter the lane number: 1
Enter the speed: 232
It is OK.
Enter the lane number: 2
Enter the speed: 72
It is OK.
Enter the lane number: 3
Enter the speed: 72
It is not OK.