

Please, rename your exercise files correctly!
"Group_05_Exercise_01.ipynb"

7.75/10

01-BBB_Exercise

December 1, 2020

1 Exercise 01:

The following exercise requires some understanding in the following subjects: - understand the notion of variable and data-types - read the user inputs - understand conditions in python

1.1 1. Review:

1.1.1 1.a. Create two variables `time` and `distance` with the following values "6.89" and "16.7" . Compute the speed and save it in a variable called `speed` and print then the speed.

```
[19]: # declare the two variables time and distance
# time = 6.89
# distance = 16.
time=6.89
distance=16.7

speed = distance / time

print(speed)
```

2.423802612481858

1.1.2 1.b. Create a list called `special_lst` with the following values: [12,8,9,13,11,10]. Compute the average value of all the value of the list with index and save it to a variable called `avg_special_lst` .

```
[20]: # create the list and then compute its average value
special_lst=[12,8,9,13,11,10]

avg_special_lst = sum(special_lst) / len(special_lst)

print(avg_special_lst)
```

10.5

```
[56]: ### 1.c. Given the following variables:
```

- 0.25 pt

```
tiger = 'cat'
lion = 'cat'
kitty = 'cat'
cheetah = 'cat'
hyena = 'dog'
wolf = 'dog'
husky = 'dog'
owl = 'bird'
pigeon = 'bird'
duck = 'bird'

tiger_is_not_a_dog = (tiger != 'dog')
print(tiger_is_not_a_dog)

a_duck_is_not_a_cat = (duck != 'cat')
print(a_duck_is_not_a_cat)

a_pigeon_is_neither_a_cat_nor_a_dog = ((pigeon != 'cat') or (pigeon != 'dog'))
print(a_pigeon_is_neither_a_cat_nor_a_dog)

a_wolf_is_a_bird = (wolf == 'bird')
print(a_wolf_is_a_bird)

a_duck_is_a_pigeon = (duck == 'bird')
print(a_duck_is_a_pigeon)

owl_is_a_duck_or_a_cheetah = (owl == duck) or (owl == cheetah)
print(owl_is_a_duck_or_a_cheetah)

husky_is_a_bird_or_duck_is_a_cat = (husky == 'bird') or (duck == 'cat')
print(husky_is_a_bird_or_duck_is_a_cat)

owl_is_a_duck_and_hyena_is_a_wolf = (owl == duck) and (hyena == wolf)
print(owl_is_a_duck_and_hyena_is_a_wolf)
```

True
True
True
False
True
True
False
True

1.2 2. Conditions

1.2.1 2.a. Ask the user for an input (as Integer), save it to a variable called `user_number` and print if the entered number is an *odd* or an *even* number.

```
[26]: # Scenario examples:
# user inpt: 3
# response: 3 it is an odd number
# -----
# user input: 14
# response: 14 is an even number
# -----

= ((piegon != 'cat') and (piegon != 'dog'))

# get the user_number

user_number = int(input("Give number"))
# check if user_number is even.
if user_number % 2:
    print("odd")
else:
    print("even")
```

Give number 14

even

1.2.2 2.b. Ask the user for 3 integer inputs `val_1`, `val_2` and `val_3` . Create also a variable `val_min`. And then with the help of if (elif, else) statement ,make the variable `val_min` get the *minimum value* of the `val_1` , `val_2` and `val_3` (without using any other method or function, ONLY with IF and ELIF)

- 2 pts

```
[28]: # for example ilf val_1 = 3, val_2 = 4 and val_3 = 7 then val_min shoud be 3
val_1 = int(input("Give 1. number!"))
val_2 = int(input("Give 2. number!"))
val_3 = int(input("Give 3. number!"))

if val_1 < val_2 < val_3:
    val_min = val_1
    print(val_min)

elif val_2 < val_3 < val_1:
    val_min = val_2
    print(val_min)

else:
    val_min = val_3
    print(val_min)
```

Give 1. number! 8
Give 2. number! 9
Give 3. number! 6

6

1.2.3 2.b. Ask the user for an input (Integer), save it to a variable called `user_number` and print if the entered number is a negative or a positive number

```
[32]: # ask for the number
user_number= int(input("Give number!"))

if user_number >= 0:
    print('positive')

else:
    print('negative')
```

Give number! 0

positive

1.2.4 2.c. We want to securise a pressurized cabins:

The max pressure is : $p_{Max} = 2.3$, and the max area is $a_{Max} = 7.41$. Ask the user for the actual pression and area - if both, the area and the pression are higher than the p_{Max} and a_{Max} , then write: “stop immediately” - if the pressure is higher than the p_{Max} , then write: “Please, add more area!” - if the area is higher the a_{Max} , then write: “Please, lower the area!” - else, write: “everything is fine!”

```
[35]: # declare the pMax=2.3 and aMax=7.41

pMax = 2.3
aMax = 7.41

# ask for the actual area and volume

user_pressure= float(input("Give pressure!"))
user_area= float(input("Give area!"))

if user_pressure > pMax and user_area > aMax:
    print("stop immediately!")

elif user_pressure > pMax:
    print("Please, add more area!")

elif user_area > aMax:
    print("Please, lower the area!")
```

```
else:  
    print("everything is fine!")
```

Give pressure! 2.1

Give area! 10.4

Please, lower area!

[]: