9.25/10

Group_08_Exercice_01

December 1, 2020

1 Exercice 01:

The following exercice 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.

[6]:
```
# declare the two variables time and distance
# time = 6.89
# distance = 16.7
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` .

[14]:
```
# create the list and then compute its average value
special_lst = [12,8,9,13,11,10]
print (special_lst)
avg_special_lst =␣
 ↪((special_lst[0]+special_lst[1]+special_lst[2]+special_lst[3]+special_lst[4]+special_lst[5]
 ↪len(special_lst))

print (avg_special_lst)
```

```
[12, 8, 9, 13, 11, 10]
10.5
```

1.1.3 1.c. Given the following variables:

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

- 0.75 pt

Write the following statements in Boolean and print the answer:

```
ex: is_tiger_a_cat = (tiger == 'cat') # true because 'true equals true' is true.

tiger_is_not_a_dog

a_duck_is_not_a_cat

a_piegon_is_neither_a_cat_nor_a_dog

a_wolf_is_a_bird

a_duck_is_a_pigeon

owl_is_a_duck_or_a_cheetah

husky_is_a_bird_or_duck_is_a_cat

owl_is_a_duck_and_hyena_is_a_wolf
```

[19]:
```
tiger = 'cat'
lion = 'cat'
kitty = 'cat'
cheetah = 'cat'
hyena = 'dog'
wolf = 'dog'
husky = 'dog'
owl = 'bird'
pigeon = 'bird'
duck = 'bird'
```

[21]:
```
a = ('tiger' != 'cat')
a
```

[21]: True

```
[22]: b = ('duck'!='cat')
      b
```

[22]: True

```
[23]: c = ('piegon'!= 'cat' and 'piegon'!='dog')
      c
```

[23]: True

```
[25]: d = ('wolf'=='bird')
      d
```

[25]: False

```
[26]: e = ('duck'=='piegon')
      e
```

[26]: False

```
[27]: f = ('owl'=='duck'or 'owl'=='cheetah')
      f
```

[27]: False

```
[28]: g = ('husky'=='bird' or 'duck'=='cat')
      g
```

[28]: False

```
[29]: h = ('owl'=='duck' and 'hyena'=='wolf')
      h
```

[29]: False

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.

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

```
# get the user_number

# check if user_number is even.

num = int(input("Enter a number: "))

if (num % 2) == 0:
    print (format(num) +' it is an even number')
else :
    print(format(num) +' it is an odd number')
```

```
Enter a number:  55
```

```
55 it is an odd number
```

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 whith 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)

[49]:
```
#### for example ilf val_1 = 3, val_2 = 4 and val_3 = 7 then val_min shoud be 3
val_1 = int(input("Enter Value 1: "))
val_2 = int(input("Enter Value 2: "))
val_3 = int(input("Enter Value 3: "))

if val_1<val_2 and val_1<val_3:
    val_min= val_1
elif val_2<val_1 and val_2<val_3:
    val_min= val_2
elif val_3<val_1 and val_3<val_2:
    val_min=val_3

print ('The minimum value is ' + format(val_min))
```

```
Enter Value 1:  5
Enter Value 2:  4
Enter Value 3:  2
```

```
The minimum value is 2
```

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

ask for the number num1 = int(input("Enter a number")) if num1 >=0: print ('The number is a postive number') else : print (' The number is a negative number')

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

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

[60]:
```
# declare the pMax=2.3 and aMax=7.41

# ask for the actual area and pressure

pmax = 2.3
amax = 7.41


p = float(input("Enter the pressure "))
a = float(input("Enter the area "))

if p>pmax and a>amax:
    print ('stop immediately ')
elif p>pmax and a<amax:
    print ('Please, add more area!')
elif a>amax and p<pmax:
    print ('Please, lower the area!')
else :
    print ('everything is fine!')
```

```
Enter the pressure  2.4
Enter the area  7.5

stop immediately
```

[ ]:

[ ]: