Please, rename your exercise files correctly!
"Group_05_Exercice_00.ipynb"

8/10

00-BBB_Exercice

November 24, 2020

1 Exercice 00

1.1 1 Numbers

1.1.1 1.a. What is the *type* of the result of the expression 3 + 1.5 + 4? (without typing code)

float

1.1.2 1.b. How do you get it with code? (method?)

[1]:
```
type(3 + 1.5 + 4)
```

[1]:
```
float
```

1.1.3 1.c. Ask the user for an iput and then save to input to an integer called "user_in" and then print the value multiplied by 5.

[1]:
```
user_in=input=(2)
print(user_in*5)
```

```
10
```

1.1.4 1.d. Ask the user for an iput and then save to input to an integer called "square_root_value" and calculate the square_root of the number from the user

- 0.25 pt

[3]:
```
import math
square_root_value=input=(2)
math.sqrt(square_root_value)
```

[3]:
```
1.4142135623730951
```

1.1.5 1.e. Ask the user for an iput and then save to input to an integer called "square_value" and calculate the square of the number from the user

[72]:
```
square_value=input=(2)
square_value**2
```

[72]: 4

1.2 2 Strings

1.2.1 2.a. Given the string 'hello' give an index command that returns 'e'. Enter your code in the cell below:

[27]:
```
greeting = 'hello'
greeting[1]
```

[27]: 'e'

1.2.2 2.b. Given the string 'hello' give an index command that returns 'hell'. Enter your code in the cell below:

[29]:
```
greeting = 'hello'
greeting[0:4]
```

[29]: 'hell'

1.2.3 2.c Given the string 'hello', create a new string variable called 'greeting_rest' from it to and save 'llo' in the new variable

[32]:
```
greeting = 'hello'
greeting_rest=greeting[2:]
print(greeting_rest)
```

```
llo
```

1.2.4 2.d. Ask the user for his or her name and then save the input to a variable named "user_name". Then print "Hello, *user_name* !"

- 0.25 pt

[77]:
```
user_name=input=('Sandra')
print('Hello, '+user_name)
```

```
Hello, Sandra
```

###2.e. Ask the user for his or her 'first_name', 'last_name' and 'age' and print the reust in a multi-line string like: 'Hello, `first_name` `last_name`.

You are `age` years old. '

- 0.50 pt

[103]:
```
fist_name=input=('Sandra')
last_name=input=('Brand')
age=input=(23)
string_line="""
Hello, {f} {l}.
You are {a} years old.
""".format(f=fist_name, l=last_name, a=age)
print(string_line)
```

```
Hello, Sandra Brand.
You are 23.
```

1.3 3. List

- 0.25 pt

1.3.1 3.a Create a list with 4 elements "45,25,56" in two differents way and save it to a variable called 'my_list'

[122]:
```
my_list = [45,25,56]
my_list
```

[122]:
```
[45, 25, 56]
```

1.3.2 3.b. From 'my_list' change the first value (index 0) to 0.

[124]:
```
my_list = [45,25,56]
my_list[0]=0
my_list
```

[124]:
```
[0, 25, 56]
```

1.3.3 3.c. Save the sum of all number in the list to a variable called 'sum_of_my_list'

[128]:
```
sum_of_my_list=sum(my_list)
sum_of_my_list
```

[128]:
```
81
```

1.3.4 3.d. sort the list bellow:

[129]:
```
list1 = [4,5,6,3,6,7,2,9]
list1.sort()
list1
```

[129]:
```
[2, 3, 4, 5, 6, 6, 7, 9]
```

1.3.5 3.e. Get the last 3 elements of the list using indexing and save it to a variable called 'list2'. Then make again the sum of 'list2' and insert the result to 'list2'

[18]:
```
list1 = [4,5,6,3,6,7,2,9]
first = list1.pop(len(list1)-1)
second = list1.pop(len(list1)-2)
third = list1.pop(len(list1)-3)
list2=first+second+third
print(list2)
```

```
19
```

1.3.6 3.f. swap list elements

- 0.5 pt

Swap the first and last elements from the list `one_to_five`

[21]:
```
one_to_five = [5,2,3,4,1]
one_to_five.sort()
print(one_to_five)
```

```
[1, 2, 3, 4, 5]
```

1.4 4. Dictionaries

Using keys and indexing, grap the word *Bremerhaven* from the following dictionaries:

[32]:
```
name = {'university':'Bremerhaven'}
print(name['university'])
```

```
Bremerhaven
```

[35]:
```
name = {'institution':{'name':'Bremerhaven'}}
print(name['institution']['name'])
```

```
Bremerhaven
```

[24]:
```
name = {'region':[{'University':'Oldenburg','Hochschule':'Bremerhaven'}]}
name['region'][0]['Hochschule']
```

[24]:
```
'Bremerhaven'
```

1.5 5. What is the major difference between tuples and lists?

The major difference between tuples and lists is that a list is mutable and a tuple is immutable - a list can be changed, but a tuple cannot.

1.6 6. Sets

1.6.1 6.a. What is unique about a set?‘

set is an unordered collection of items. Every set element is unique.

1.6.2 6.b. Use a set to find the unique values of the list below:

[30]:
```
unsorted_list = [1,2,2,1,3,5,4,8,7,74,8,8,9,9,5,4,45,12,4,2]
set(unsorted_list)
```

[30]:
```
{1, 2, 3, 4, 5, 7, 8, 9, 12, 45, 74}
```

1.7 6. Boolean

What will be the value of the following boolean?

[36]:
```
4**0.5 != 2
```

- 0.25 pt

[36]:
```
False
```

[38]:
```
a = 1 < 4
```

[39]:
```
b = 'b' < 'c'
```

[40]:
```
c = (a == b)
```

[41]:
```
d = (c or False)
```

[42]:
```
e = (c and False) # equivalent to 'e=((a==b) and False)' <=>
↪'e=(((1<4)==('b'<'c')) and False'
```

[ ]:
```

```