TP - Python

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2020-12-11

```
python3 -V
Python 3.7.9

>>> 2+3
5
>>> 3*3
9

>>> 2+3
5
>>> 3*3
9

>>> print ("Hello World !")
Hello World !
>>> quit()
PS C:\Users\basti\Desktop\tuto1-python-liste-dict>

python3 .\file\hello.py
Hello World

>>> type(98)
<class 'int'>
>>> type("98")
<class 'str'>
>>> type(98.5)
<class 'float'>

>>> 1>1
False
>>> 1==1
True
>>> 1<1
False
>>> 1<=1
True

>>> x=3
>>> x*5
15

>>> "HELLO "*3
'HELLO HELLO HELLO '

>>> str1="Test"
>>> str2="IUT"
>>> str3="Beziers"
>>> espace=" "
>>> print(str1+espace+str2+espace+str3)
```

```
Test IUT Beziers

>>> print(str1,str2,str3)
Test IUT Beziers

>>> print("La valeur de x est " + str(x))
La valeur de x est 3

>>> type(x)
<class 'int'>
>>> x=str(x)
>>> type(x)
<class 'str'>

>>> f"The value of pi is {num}"
'The value of pi is 3.142857142857143'

>>> f"The value of pi is {pi}"
'The value of pi is 3.14'

>>> hostnames=["R1","R2","R3","S1","S2"]

>>> type(hostnames)
<class 'list'>
>>> len(hostnames)
5
>>> hostnames
['R1', 'R2', 'R3', 'S1', 'S2']

>>> hostnames[1]
'R2'
>>> hostnames[-1]
'S2'
>>> hostnames[0]="RTR1"
>>> hostnames
['RTR1', 'R2', 'R3', 'S1', 'S2']
>>> del hostnames[3]
>>> hostnames
['RTR1', 'R2', 'R3', 'S2']

>>> ipAddress={"R1":"10.1.1.1","R2":"10.2.2.1","R3":"10.3.3.1"}
>>> type(ipAddress)
<class 'dict'>

>>> ipAddress
{'R1': '10.1.1.1', 'R2': '10.2.2.1', 'R3': '10.3.3.1'}
>>> ipAddress['R1']
'10.1.1.1'

>>> ipAddress["R3"]=["10.3.3.1","10.3.3.2","10.3.3.3"]
>>> ipAddress
```

```
101 {'R1': '10.1.1.1', 'R2': '10.2.2.1', 'R3': ['10.3.3.1', '10.3.3.2', '
       10.3.3.3']}
```

Part 5: Review the Input Function

Step 2: Create a script to collect personal information

```
1 firstName = input("What is your first name? ")
2 lastName = input("What is your last name? ")
3 location = input("What is your location? ")
4 age = input("What is your age? ")
5
6 print("Bonjour " + firstName + " " + lastName + " ! Your location is "
      + location + " and you are " + age + " years old" )
```

Part 6: Review If, For, and While Functions

Step 1: Create an if/else function.

```
1 python3 .\file\personal-info.py
2 What is your first name? bastien
3 What is your last name? guillot
4 What is your location? béziers
5 What is your age? 22
6 Bonjour bastien guillot ! Your location is béziers and you are 22 years
      old
```

```
1 python3 .\file\if-vlan.py
2 The native VLAN and the data VLAN are different.
```

Step 2: Create an if/elif/else function.

```
python3 .\file\if-vlan.py
The native VLAN and the data VLAN are the same.
```

```
python3 .\file\if-acl.py
What is the IPv4 ACL number? 10
This is a standard IPv4 ACL.
python3 .\file\if-acl.py
What is the IPv4 ACL number? 172
This is an extended IPv4 ACL.
python3 .\file\if-acl.py
What is the IPv4 ACL number? 200
This is not a standard or extended IPv4 ACL.
```

Step 3: Create a for loop.

```
>>> devices=["R1","R2","R3","S1","S2"]
>>> for items in devices:
...     print(items)
...
R1
R2
R3
S1
S2
```

```
>>> for items in devices:
...     if "R" in items:
...             print(items)
...
R1
R2
R3
```

```
>>> switches=[]
>>> for items in devices:
...     if "S" in items:
```

```
...             switches.append(items)
...
>>> switches
['S1', 'S2']
```

Step 4: While Loop

```
x=input("Enter a number to count to: ")
x=int(x)
y=1
while y<=x:
    print(y)
    y=y+1
```

```
python3 .\file\while-loop.py
Enter a number to count to: 10
1
2
3
4
5
6
7
8
9
10
```

```
x=input("Enter a number to count to: ")
x=int(x)
y=1
while True:
    print(y)
    y=y+1
    if y>x:
        break
```

```
python3 .\file\while-loop.py
Enter a number to count to: 10
1
2
3
```

```
4
5
6
7
8
9
10
```

Step 5: Use a while loop to check for a user quit command.

```python
while True:
    x=input("Enter a number to count to: ")
    if x == 'q' or x == 'quit':
        break
    x=int(x)
    y=1
    while True:
        print(y)
        y=y+1
        if y>x:
            break
```

```
python3 .\file\while-loop.py
Enter a number to count to: 3
1
2
3
Enter a number to count to: quit
```

Part 7: Review Methods for File Access

Step 1: Create a program that reads an external file.

```python
file=open("file/devices.txt","r")
for item in file:
    print(item)
file.close()
```

```
python3 .\file\file-access.py
Cisco 819 Router

Cisco 881 Router

Cisco 888 Router

Cisco 1100 Router

Cisco 4321 Router

Cisco 4331 Router

Cisco 4351 Router

Cisco 2960 Catalyst Switch

Cisco 3850 Catalyst Switch

Cisco 7700 Nexus Switch

Cisco Meraki MS220-8 Cloud Managed Switch

Cisco Meraki MX64W Security Appliance

Cisco Meraki MX84 Security Appliance

Cisco Meraki MC74 VoIP Phone

Cisco 3860 Catalyst Switch
```

Step 2: Remove the blank lines from the output.

```
file=open("file/devices.txt","r")
for item in file:
    item=item.strip()
    print(item)
file.close()
```

```
python3 .\file\file-access.py
Cisco 819 Router
Cisco 881 Router
Cisco 888 Router
```

```
Cisco 1100 Router
Cisco 4321 Router
Cisco 4331 Router
Cisco 4351 Router
Cisco 2960 Catalyst Switch
Cisco 3850 Catalyst Switch
Cisco 7700 Nexus Switch
Cisco Meraki MS220-8 Cloud Managed Switch
Cisco Meraki MX64W Security Appliance
Cisco Meraki MX84 Security Appliance
Cisco Meraki MC74 VoIP Phone
Cisco 3860 Catalyst Switch
```

Step 3: Copy the content of a file into a list variable.

```
devices=[]
file=open("file/devices.txt","r")
for item in file:
    item=item.strip()
    devices.append(item)
file.close()
print(devices)
```

```
python3 .\file\file-access.py
['Cisco 819 Router', 'Cisco 881 Router', 'Cisco 888 Router', 'Cisco
   1100 Router', 'Cisco 4321 Router', 'Cisco 4331 Router', 'Cisco 4351
   Router', 'Cisco 2960 Catalyst Switch', 'Cisco 3850 Catalyst Switch',
    'Cisco 7700 Nexus Switch', 'Cisco Meraki MS220-8 Cloud Managed
   Switch', 'Cisco Meraki MX64W Security Appliance', 'Cisco Meraki MX84
    Security Appliance', 'Cisco Meraki MC74 VoIP Phone', 'Cisco 3860
   Catalyst Switch']
```

Step 4: Challenge: Create a script to allow the user to add devices.

```
print("Bonjour,\nNous allons ajouter des lignes au fichier 'device.txt'
   ")
print("Pour quitter le programme, taper 'quit'")
print("-"*9)
file=open("file/devices.txt", "a")

while True:
```

```
    newItem=input("Rentrer une valeur : ")
    if newItem == "quit":
        break
    else:
        file.write("\n"+newItem)

print("\n"+"-"*9)
file.close()

file=open("file/devices.txt", "r")
print(file.read())
file.close()
```

```
python3 .\file\file-access-input.py
Bonjour,
Nous allons ajouter des lignes au fichier 'device.txt'
Pour quitter le programme, taper 'quit'
---------
Rentrer une valeur : test
Rentrer une valeur : test2
Rentrer une valeur : test3
Rentrer une valeur : quit

---------
Cisco 819 Router
Cisco 881 Router
Cisco 888 Router
Cisco 1100 Router
Cisco 4321 Router
Cisco 4331 Router
Cisco 4351 Router
Cisco 2960 Catalyst Switch
Cisco 3850 Catalyst Switch
Cisco 7700 Nexus Switch
Cisco Meraki MS220-8 Cloud Managed Switch
Cisco Meraki MX64W Security Appliance
Cisco Meraki MX84 Security Appliance
Cisco Meraki MC74 VoIP Phone
Cisco 3860 Catalyst Switch
test
test2
test3
```