
TP - Python

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```
1 python3 -V
2 Python 3.7.9
3
4 >>> 2+3
5 5
6 >>> 3*3
7 9
8
9 >>> 2+3
10 5
11 >>> 3*3
12 9
13
14 >>> print ("Hello World !")
15 Hello World !
16 >>> quit()
17 PS C:\Users\basti\Desktop\tuto1-python-list-dict>
18
19 python3 .\file\hello.py
20 Hello World
21
22 >>> type(98)
23 <class 'int'>
24 >>> type("98")
25 <class 'str'>
26 >>> type(98.5)
27 <class 'float'>
28
29 >>> 1>1
30 False
31 >>> 1==1
32 True
33 >>> 1<1
34 False
35 >>> 1<=1
36 True
37
38 >>> x=3
39 >>> x*5
40 15
41
42 >>> "HELLO "*3
43 'HELLO HELLO HELLO '
44
45 >>> str1="Test"
46 >>> str2="IUT"
47 >>> str3="Beziers"
48 >>> espace=" "
49 >>> print(str1+espace+str2+espace+str3)
```

```
50 Test IUT Beziers
51
52 >>> print(str1,str2,str3)
53 Test IUT Beziers
54
55 >>> print("La valeur de x est " + str(x))
56 La valeur de x est 3
57
58 >>> type(x)
59 <class 'int'>
60 >>> x=str(x)
61 >>> type(x)
62 <class 'str'>
63
64 >>> f"The value of pi is {num}"
65 'The value of pi is 3.142857142857143'
66
67 >>> f"The value of pi is {pi}"
68 'The value of pi is 3.14'
69
70 >>> hostnames=["R1","R2","R3","S1","S2"]
71
72 >>> type(hostnames)
73 <class 'list'>
74 >>> len(hostnames)
75 5
76 >>> hostnames
77 ['R1', 'R2', 'R3', 'S1', 'S2']
78
79 >>> hostnames[1]
80 'R2'
81 >>> hostnames[-1]
82 'S2'
83 >>> hostnames[0]="RTR1"
84 >>> hostnames
85 ['RTR1', 'R2', 'R3', 'S1', 'S2']
86 >>> del hostnames[3]
87 >>> hostnames
88 ['RTR1', 'R2', 'R3', 'S2']
89
90 >>> ipAddress={"R1":"10.1.1.1","R2":"10.2.2.1","R3":"10.3.3.1"}
91 >>> type(ipAddress)
92 <class 'dict'>
93
94 >>> ipAddress
95 {'R1': '10.1.1.1', 'R2': '10.2.2.1', 'R3': '10.3.3.1'}
96 >>> ipAddress['R1']
97 '10.1.1.1'
98
99 >>> ipAddress["R3"]=["10.3.3.1","10.3.3.2","10.3.3.3"]
100 >>> 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.

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

```
1 python3 .\file\if-acl.py
2 What is the IPv4 ACL number? 10
3 This is a standard IPv4 ACL.
4 python3 .\file\if-acl.py
5 What is the IPv4 ACL number? 172
6 This is an extended IPv4 ACL.
7 python3 .\file\if-acl.py
8 What is the IPv4 ACL number? 200
9 This is not a standard or extended IPv4 ACL.
```

Step 3: Create a for loop.

```
1 >>> devices=["R1","R2","R3","S1","S2"]
2 >>> for items in devices:
3 ...     print(items)
4 ...
5 R1
6 R2
7 R3
8 S1
9 S2
```

```
1 >>> for items in devices:
2 ...     if "R" in items:
3 ...         print(items)
4 ...
5 R1
6 R2
7 R3
```

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

```
4 ...             switches.append(items)
5 ...
6 >>> switches
7 ['S1', 'S2']
```

Step 4: While Loop

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

```
1 python3 .\file\while-loop.py
2 Enter a number to count to: 10
3 1
4 2
5 3
6 4
7 5
8 6
9 7
10 8
11 9
12 10
```

```
1 x=input("Enter a number to count to: ")
2 x=int(x)
3 y=1
4 while True:
5     print(y)
6     y=y+1
7     if y>x:
8         break
```

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

```
6 4
7 5
8 6
9 7
10 8
11 9
12 10
```

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

```
1 while True:
2     x=input("Enter a number to count to: ")
3     if x == 'q' or x == 'quit':
4         break
5     x=int(x)
6     y=1
7     while True:
8         print(y)
9         y=y+1
10        if y>x:
11            break
```

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

Part 7: Review Methods for File Access

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

```
1 file=open("file/devices.txt","r")
2 for item in file:
3     print(item)
4 file.close()
```

```
1 python3 .\file\file-access.py
2 Cisco 819 Router
3
4 Cisco 881 Router
5
6 Cisco 888 Router
7
8 Cisco 1100 Router
9
10 Cisco 4321 Router
11
12 Cisco 4331 Router
13
14 Cisco 4351 Router
15
16 Cisco 2960 Catalyst Switch
17
18 Cisco 3850 Catalyst Switch
19
20 Cisco 7700 Nexus Switch
21
22 Cisco Meraki MS220-8 Cloud Managed Switch
23
24 Cisco Meraki MX64W Security Appliance
25
26 Cisco Meraki MX84 Security Appliance
27
28 Cisco Meraki MC74 VoIP Phone
29
30 Cisco 3860 Catalyst Switch
```

Step 2: Remove the blank lines from the output.

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

```
1 python3 .\file\file-access.py
2 Cisco 819 Router
3 Cisco 881 Router
4 Cisco 888 Router
```



```
5 Cisco 1100 Router
6 Cisco 4321 Router
7 Cisco 4331 Router
8 Cisco 4351 Router
9 Cisco 2960 Catalyst Switch
10 Cisco 3850 Catalyst Switch
11 Cisco 7700 Nexus Switch
12 Cisco Meraki MS220-8 Cloud Managed Switch
13 Cisco Meraki MX64W Security Appliance
14 Cisco Meraki MX84 Security Appliance
15 Cisco Meraki MC74 VoIP Phone
16 Cisco 3860 Catalyst Switch
```

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

```
1 devices=[]
2 file=open("file/devices.txt","r")
3 for item in file:
4     item=item.strip()
5     devices.append(item)
6 file.close()
7 print(devices)
```

```
1 python3 .\file\file-access.py
2 ['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.

```
1 print("Bonjour,\nNous allons ajouter des lignes au fichier 'device.txt'
   ")
2 print("Pour quitter le programme, taper 'quit'")
3 print("-"*9)
4 file=open("file/devices.txt", "a")
5
6 while True:
```

```
7     newItem=input("Rentrer une valeur : ")
8     if newItem == "quit":
9         break
10    else:
11        file.write("\n"+newItem)
12
13    print("\n"+"-"*9)
14    file.close()
15
16    file=open("file/devices.txt", "r")
17    print(file.read())
18    file.close()
```

```
1  python3 .\file\file-access-input.py
2  Bonjour,
3  Nous allons ajouter des lignes au fichier 'device.txt'
4  Pour quitter le programme, taper 'quit'
5  -----
6  Rentrer une valeur : test
7  Rentrer une valeur : test2
8  Rentrer une valeur : test3
9  Rentrer une valeur : quit
10
11  -----
12  Cisco 819 Router
13  Cisco 881 Router
14  Cisco 888 Router
15  Cisco 1100 Router
16  Cisco 4321 Router
17  Cisco 4331 Router
18  Cisco 4351 Router
19  Cisco 2960 Catalyst Switch
20  Cisco 3850 Catalyst Switch
21  Cisco 7700 Nexus Switch
22  Cisco Meraki MS220-8 Cloud Managed Switch
23  Cisco Meraki MX64W Security Appliance
24  Cisco Meraki MX84 Security Appliance
25  Cisco Meraki MC74 VoIP Phone
26  Cisco 3860 Catalyst Switch
27  test
28  test2
29  test3
```