Institute of Technology Tallaght

IT Scripting and Automation

Lab 5

Dr. Fernando Perez Tellez

Exercise 1.

Create the following scripts. Provide screenshots of the scripts.

a) A Python script (helloFunction.py) with a function called "hello" which will accept a parameter.

```
def hello (parameter):
      # Write the function code here
      #

#within the script call hello function using a parameter
hello ("World")
hello ("everybody")
hello ("John")
```

Script Execution:

```
student@itserver:~/python$ ./helloFunction.py
Hello World
Hello everybody
Hello John
```

b) A Python script (fahrenheitToCelsius.py) with a function called "farenheit" which will accept a parameter and convert Celsius to Fahrenheit degrees.
Formula: `(Temp_in_celsius * 9 / 5) + 32`

```
def fahrenheit(Temp_in_celsius):
      # Write the function code here
      #

#Calculate Fahrenheit temperatures from 0 to 50 Celsius degrees (use a
loop). Call the function in every loop iteration.
```

```
student@itserver:~/python$ ./fahrenheitToCelsius.py
1 celsius degrees are 33.8 Fahrenheit degrees
2 celsius degrees are 35.6 Fahrenheit degrees
3 celsius degrees are 37.4 Fahrenheit degrees
4 celsius degrees are 39.2 Fahrenheit degrees
5 celsius degrees are 41.0 Fahrenheit degrees
6 celsius degrees are 42.8 Fahrenheit degrees
7 celsius degrees are 44.6 Fahrenheit degrees
8 celsius degrees are 46.4 Fahrenheit degrees
9 celsius degrees are 48.2 Fahrenheit degrees
10 celsius degrees are 50.0 Fahrenheit degrees
11 celsius degrees are 51.8 Fahrenheit degrees
12 celsius degrees are 53.6 Fahrenheit degrees
13 celsius degrees are 55.4 Fahrenheit degrees
14 celsius degrees are 57.2 Fahrenheit degrees
15 celsius degrees are 59.0 Fahrenheit degrees
16 celsius degrees are 60.8 Fahrenheit degrees
17 celsius degrees are 62.6 Fahrenheit degrees
18 celsius degrees are 64.4 Fahrenheit degrees
19 celsius degrees are 66.2 Fahrenheit degrees
20 celsius degrees are 68.0 Fahrenheit degrees
21 celsius degrees are 69.8 Fahrenheit degrees
22 celsius degrees are 71.6 Fahrenheit degrees
23 celsius degrees are 73.4 Fahrenheit degrees
24 celsius degrees are 75.2 Fahrenheit degrees
25 celsius degrees are 77.0 Fahrenheit degrees
26 celsius degrees are 78.8 Fahrenheit degrees
27 celsius degrees are 80.6 Fahrenheit degrees
```

c) A script (math_op.py) with a funciton called "sum_op" which will accept two parameters (numbers). Use the **return** statement.

```
def sum_op(number1,number2):
        # Write the function code here
        return result


res = return_sum(4,5)
print("Addition result: " + str(res))
```

```
student@itserver:~/python$ ./math_op.py
Addition result: 9
```

Exercise 2.

Create a **Python script** to calculate:

- Addition
- subtraction
- Multiplication
- Division
- The larger number
- Show if the numbers are even or odd numbers.

of two numbers. Each of these operations should be created in a function.

Read in the numbers provided by the user. (hint: use *input()* method)

Make sure that the script is reusable (executable in a shell and importable in iPython) use:

If __name__=="__main__"

Exercise 3.

Create a **Python script** to show (use functions – one for each point):

- The ports that are 'listening' in your system
- Disk usage in your system
- Network interfaces
- Routing table
- Usage of the /tmp directory
- All empty files in /tmp directory
- show all the processes IDs of the user 'root'

Use '*import subprocess*' and '*subprocess.call()*' methods.

Make sure that the script is reusable (executable in bash shell and importable in iPython)

Exercise 4.

Write a **Python function** to find the first appearance of the substring 'not' and 'poor' from a given string.

- If 'not' and 'poor' substrings are not found return the original string
- If 'not' follows the 'poor', replace the 'not' and 'poor' substring with ‘very’ and 'good'
- If ‘not’ does not follow the ‘poor’ do nothing to the string
- Return the resulting string

Hint: use ***find*** method, ***if*** statement and ***replace*** method.

Sample String: ‘The script is not poor!’

Expected Output: ‘The script is very good!’