Python Bootcamp {2019}

EXERCISES

EXERCISE 01

Description :

You will write a program that display “Welcome to Kirirom!”.

Requirements :

- Program must be named : **01_welcome.py** and saved into **week01/ex** folder

Hint :

- ❖ print function

Output :

```
$ python 01_welcome.py
Welcome to Kirirom!
```

EXERCISE 02

Description :

You will write a program that display “Hello <NAME>!” inside the console. The program will first ask for your name :
“What is your name?”
Then waiting for an input
Finally display the complete message.

Requirements :

- Program must be named : **02_name.py** and saved into **week01/ex** folder

Hint :

- ❖ print function
- ❖ input function

Python Bootcamp {2019}

Output :

```
$ python 02_name.py
What is your name?
>> Kevin
Hello Kevin!
```

EXERCISE 03

Description :

You will write a program that display “Hello World!” N times inside the console. The program will first ask you to enter a number (N).
Then, inside a loop, display as many “Hello World!” as specify
If no argument is passed, display “Nothing to display”
After displaying the result, the program must quit.

Requirements :

- Program must be named : **03_hello.py** and saved into **week01/ex** folder

Hint :

- ❖ print function
- ❖ input function
- ❖ loop

Output :

```
$ python 03_hello.py
Enter a number:
>> 3
Hello World!
Hello World!
Hello World!
```

```
$ python 03_hello.py
Enter a number:
>>
Nothing to display
```

Python Bootcamp {2019}

EXERCISE 04

Description :

The program will ask for a number: “Enter a number:”
Then ask for another one: “Enter a second number:”
Finally, the program will display the output.
“Result : BIGGER_NUMBER > SMALLER_NUMBER”
If the numbers are equals:
“Result : NUMBER_01 == NUMBER_02”

Requirements :

- Program must be named : **04_max.py** and saved into **week01/ex** folder

Hint :

- print function
- arithmetic operators
- conditions

Output :

```
$ python 04_max.py
Enter a number:
>> 5
Enter a second number:
>> 10
Result : 10 > 5

$ python 04_max.py
Enter a number:
>> 8
Enter a second number:
>> 8
Result : 8 == 8
```

Python Bootcamp {2019}

EXERCISE 05

Description :

The program will ask for a number: “Enter a number:”
Then ask for another one: “Enter a second number:”
Finally, the program will display the output.
“Result : SMALLER_NUMBER < BIGGER_NUMBER”
If the numbers are equals:
“Result : NUMBER_01 == NUMBER_02”

Requirements :

- Program must be named : **05_min.py** and saved into **week01/ex** folder

Hint :

- ❖ print function
- ❖ arithmetic operators
- ❖ conditions

Output :

```
$ python 05_min.py
Enter a number:
>> 5
Enter a second number:
>> 10
Result : 5 < 10

$ python 05_min.py
Enter a number:
>> 8
Enter a second number:
>> 8
Result : 8 == 8
```

Python Bootcamp {2019}

EXERCISE 06

Description :

You will write a program that take will ask for a number in parameter and display **“<number> is EVEN”** or **“number is ODD”**. If the number is not an integer, you will have to display **“<input> is not a valid number.”**. If you enter **“exit”** or **“EXIT”** the program will quit. Else the program will continue ask you for a number.

Requirements :

- Program must be named : **06_odd_even.py** and saved into **week01/ex** folder

Hint :

- ❖ print function
- ❖ input function
- ❖ arithmetic operators
- ❖ conditions

Output :

```
$ python 06_odd_even.py
Enter a number:
>> 3
3 is ODD

Enter a number:
>> 10
10 is EVEN

Enter a number:
>> abc
abc is not a valid number.

Enter a number:
>> EXIT
```

Python Bootcamp {2019}

EXERCISE 07

Description :

You will write a program that take ask to enter a number and print the total value of all the numbers you did enter. If you enter nothing, the program will just display the current result. If you enter exit the program will quit.

Requirements :

- Program must be named : **07_calcul.py** and saved into **week01/ex** folder

Hint :

- ❖ print function
- ❖ arithmetic operators
- ❖ conditions

Output :

```
$ python 07_calcul.py
Enter a number: 1
TOTAL: 1
Enter a number: 10
TOTAL: 11
Enter a number: -20
TOTAL: -9
Enter a number:
TOTAL: -9
Enter a number: exit
```

EXERCISE 08

Description :

You will write a program that take display a random number between 1 and 100

Requirements :

- Program must be named : **08_random.py** and saved into **week01/ex** folder

Hint :

- print function
- random

Output :

```
$ python 08_random.py
54

$ python 08_random.py
99
```

EXERCISE 9

Description :

You will write a program that ask to enter a number (N) and display N times a random number between 1 and 100

Requirements :

- Program must be named : **09_random_loop.py** and saved into **week01/ex** folder

Hint :

- print function
- random
- loop

Output :

```
$ python 09_random_loop.py
Enter a number: 3
15
49
32
```

Python Bootcamp {2019}

EXERCISE 10

Description :

You will write a program that ask for a string and display the length. If nothing is passed inside the input function, the program will display “The string is empty.”

Requirements :

- Program must be named : **10_str_length.py** and saved into **week01/ex** folder

Hint :

- print function
- string
- len

Output :

```
$ python 10_str_length.py
Enter a string:
>> Hello World!
12

$ python 10_str_length.py
Enter a string:
>>
The string is empty.
```

EXERCISE 11

Description :

You will write a program that will ask for a string and display it capitalize. If nothing is passed inside the input function, the program will display “The string is empty.”

Python Bootcamp {2019}

Requirements :

- Program must be named : **11_str_cap.py** and saved into **week01/ex** folder

Hint :

- ❖ print function
- ❖ string

Output :

```
$ python 11_str_cap.py
Enter a string: “Hello, World!”
HELLO, WORLD!

$ python 11_str_cap.py
Enter a string:
The string is empty.
```

EXERCISE 12

Description :

You will write a program that will ask for a string and display it lowercase. If nothing is passed inside the input function, the program will display “The string is empty.”

Requirements :

- Program must be named : **12_str_low.py** and saved into **week01/ex** folder

Hint :

- ❖ print function
- ❖ string

Output :

```
$ python 12_str_low.py
Enter a string:
“Hello, World!”

$ python 12_str_low.py
Enter a string:
```

```
The string is empty.
```

EXERCISE 13

Description :

You will write a program that will ask for a string and display it reversed.

Requirements :

- Program must be named : **13_str_reverse.py** and saved into **week01/ex** folder

Hint :

- ❖ print function
- ❖ string

Output :

```
$ python string_reverse.py
Enter a string: “Hello, World!”
!dlroW ,olleH
```

EXERCISE 14

Description :

You will write a program that ask for a string and display it as HTML title.

Requirements :

- Program must be named : **14_html_title.py** and saved into **week01/ex** folder

Hint :

- ❖ print function
- ❖ string

Output :

```
$ python html_title.py
Enter a title: “Welcome to Kirirom!”
<h1>Welcome to Kirirom</h1>
```

EXERCISE 15

Description :

You will write a program that will ask for strings until you enter the command: “Generate”. Then, for each string, a new line will be generate and display as an HTML paragraph.

Requirements :

- Program must be named : **15_html_text.py** and saved into **week01/ex** folder

Hint :

- print function
- string
- loop

Output :

```
$ python 15_html_text.py
Enter a string: Welcome to Kirirom!
Enter a string: Hello
Enter a string: Thank you
Enter a string: Generate
<p>Welcome to Kirirom</p>
<p>Hello</p>
<p>Thank you</p>
```

Python Bootcamp {2019}

EXERCISE 16

Description :

You will write a program that ask for one string as and return the first character. If no argument is passed, display “Empty”

Requirements :

- Program must be named : **16_str_first.py** and saved into **week01/ex** folder

Hint :

- print function
- string index

Output :

```
$ python 16_str_first.py
Enter a string: hello
h

$ python 16_str_first.py
Enter a string:
Empty
```

EXERCISE 17

Description :

You will write a program that ask for one string as and return the last character. If no argument is passed, display “Empty”

Requirements :

- Program must be named : **17_str_last.py** and saved into **week01/ex** folder

Hint :

- ❖ print function
- ❖ string index

Output :

```
$ python 17_str_last.py
Enter a string: hello
o

$ python 17_str_last.py
Enter a string:
Empty
```

EXERCISE 18

Description :

You will write a program that will ask for a string and replace lowercase with uppercase and uppercase with lowercase. If not argument is passed, display “Empty”

Requirements :

- Program must be named : **18_case_rev.py** and saved into **week01/ex** folder

Hint :

- ❖ string
- ❖ ascii

Output :

```
$ python 18_case_rev.py
Enter a string: aBcDeF
AbCdEf

$ python 18_case_rev.py
```

Python Bootcamp {2019}

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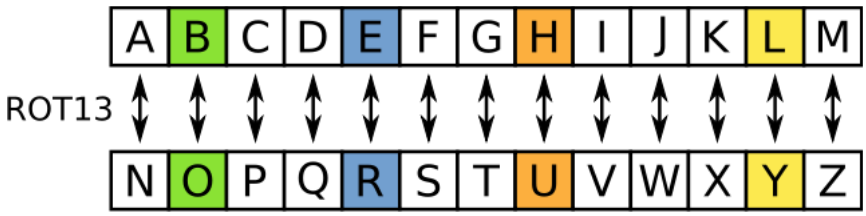
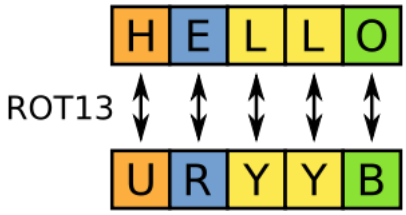
```
Enter a string:
Empty
```

EXERCISE 19

Description :

> **ROT13** ("**rotate by 13 places**", sometimes hyphenated **ROT-13**) is a simple letter substitution cipher that replaces a letter with the 13th letter after it, in the alphabet. ROT13 is a special case of the Caesar cipher which was developed in ancient Rome.





> You will write a program that encode a string with ROT13 system

Requirements :

- Program must be named : **19_encode.py** and saved into **week01/ex** folder

Output :

```
$ python 19_encode.py
Enter your secret message: This is a secret message.
```

Python Bootcamp {2019}


```
Guvf vf n frperg zrffntr.

$ python 19_encode.py
Enter your secret message:
Nothing to encode.
```

EXERCISE 20

Description :

Now that you have successfully create your program that can encode a message with ROT13, we will need to create one to decode it. You will write a program that decode a string with ROT13 system

Requirements :

- Program must be named : **20_decode.py** and saved into **week01/ex** folder

Output :

```
$ python 20_decode.py
Enter your encrypted message: Guvf vf n frperg zrffntr.
This is a secret message.

$ python 20_decode.py
Enter your encrypted message:
Nothing to decode.
```

You just finish the first week exercises, congratulations! Before submitting your exercises make sure that your did not forget anything. Send your zip folder to the following address : **kevin.sabbe@kit.edu.kh**

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