Python Bootcamp {2019}

EXERCISES

EXERCISE 01

Description :
        You will write a program that display "Hello World!".

Requirements :
   ● Program must be named : **hello.py** and saved into **PyBC_EW1** folder

Hint :
   ❖ print function

Output :

```
$ python hello.py
Hello World!
```

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 : **hello2.py** and saved into **PyBC_EW1** folder

Hint :
   ❖ print function
   ❖ Input / raw_input function

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Output :

```
$ python hello2.py
What is your name?
>> Kirirom
Hello Kirirom!
```

EXERCISE 03

Description :

> You will write a program that display "Hello World!" N times inside the
> console. N will correspond to the number you pass as argument.
> The first step will be to get the argument number
> Then, inside a loop, display as many "Hello World!" as specify
> If no argument is passed, display "Nothing to display"

Requirements :
- Program must be named : **hello3.py** and saved into **PyBC_EW1** folder

Hint :
- ❖ print function
- ❖ loop
- ❖ sys.argv

Output :

```
$ python hello3.py 5
Hello World!
Hello World!
Hello World!
Hello World!
Hello World!

$ python hello3.py
Nothing to display
```

EXERCISE 04

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Description :
      You will write a program that take 2 numbers in parameters and return the bigger.

Requirements :
- Program must be named : **max.py** and saved into **PyBC_EW1** folder

Hint :
- ❖ print function
- ❖ arithmetic operators
- ❖ conditions

Output :

```
$ python max.py 3 5
5

$ python max.py 10 5
10
```

EXERCISE 05

Description :
      You will write a program that take 2 numbers in parameters and return the smaller.

Requirements :
- Program must be named : **min.py** and saved into **PyBC_EW1** folder

Hint :
- ❖ print function
- ❖ arithmetic operators
- ❖ conditions

Output :

```
$ python min.py 3 5
3

$ python min.py 10 5
5
```

EXERCISE 06

Description :
    You will write a program that take 1 number in parameter and display
EVEN or ODD

Requirements :
   ● Program must be named : **number.py** and saved into **PyBC_EW1** folder

Hint :
   ❖ print function
   ❖ arithmetic operators
   ❖ conditions

Output :

```
$ python min.py 3
ODD

$ python min.py 10
EVEN
```

EXERCISE 07

Description :
    You will write a program that take 1 number in parameter and display
EVEN or ODD

Requirements :
   ● Program must be named : **number.py** and saved into **PyBC_EW1** folder

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Hint :
  ❖ print function
  ❖ arithmetic operators
  ❖ conditions

Output :

```
$ python min.py 3
ODD

$ python min.py 10
EVEN
```

EXERCISE 08

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

Requirements :
  ● Program must be named : **random.py** and saved into **PyBC_EW1** folder

Hint :
  ❖ print function
  ❖ random

Output :

```
$ python random.py
54

$ python random.py
99
```

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EXERCISE 9

Description :

   You will write a program that take a number as argument and display N
   times a random number between 1 and 100

Requirements :
   ● Program must be named : **random2.py** and saved into **PyBC_EW1** folder

Hint :
   ❖ print function
   ❖ random
   ❖ loop

Output :

```
$ python random2.py 3
54
99
27
```

EXERCISE 10

Description :

   You will write a program that take a string in parameter and display
   the length.

Requirements :
   ● Program must be named : **string_len.py** and saved into **PyBC_EW1** folder

Hint :
   ❖ print function
   ❖ string
   ❖ len

Output :

```
$ python string_len.py "Hello, World!"
12
```

EXERCISE 11

Description :
        You will write a program that take a string in parameter and display it
        capitalize.

Requirements :
   ● Program must be named : **string_cap.py** and saved into **PyBC_EW1** folder

Hint :
   ❖ print function
   ❖ string

Output :

```
$ python string_len.py "Hello, World!"
HELLO, WORLD!
```

EXERCISE 12

Description :
        You will write a program that take a string in parameter and display it
        lowercase.

Requirements :
   ● Program must be named : **string_low.py** and saved into **PyBC_EW1** folder

Hint :
   ❖ print function
   ❖ string

Output :

```
$ python string_len.py "Hello, World!"
hello, world!
```

EXERCISE 13

Description :
      You will write a program that take a string in parameter and display it
      reversed.

Requirements :
   ● Program must be named : **string_reverse.py** and saved into **PyBC_EW1**
      folder

Hint :
   ❖ print function
   ❖ string

Output :

```
$ python string_reverse.py "Hello, World!"
!dlroW ,olleH
```

EXERCISE 14

Description :
      You will write a program that take a string in parameter and display it
      as HTML title.

Requirements :
   ● Program must be named : **html_title.py** and saved into **PyBC_EW1** folder

Hint :
   ❖ print function
   ❖ string

Output :

```
$ python html_title.py "Welcome to Kirirom!"
<h1>Welcome to Kirirom</h1>
```

EXERCISE 15

Description :
    You will write a program that take strings in parameter and display it
    as HTML paragraphs. For each string, a new line must be generate.

Requirements :
 ● Program must be named : **html_paragraphs.py** and saved into **PyBC_EW1**
   folder

Hint :
 ❖ print function
 ❖ string
 ❖ loop

Output :

```
$ python html_paragraphs.py "Welcome to Kirirom!" Hello "Thank you"
<p>Welcome to Kirirom</p>
<p>Hello</p>
<p>Thank you</p>
```

EXERCISE 16

Description :
    You will write a program that take 1 string as argument and return the
    first character. If no argument is passed, display "Empty"

Requirements :
 ● Program must be named : **first_char.py** and saved into **PyBC_EW1** folder

Hint :
 ❖ print function

❖ string index

Output :

```
$ python first_char.py "hello"
h

$ python first_char.py
Empty
```

EXERCISE 17

Description :

You will write a program that take 1 string as argument and return the last character. If no argument is passed, display "Empty"

Requirements :

- Program must be named : **last_char.py** and saved into **PyBC_EW1** folder

Hint :

❖ print function
❖ string index

Output :

```
$ python last_char.py "hello"
o

$ python last_char.py
Empty
```

EXERCISE 18

Description :

You will write a program that take a string in parameter and replace lowercase with uppercase and uppercase with lowercase. If not argument is passed, display "Empty"

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Requirements :
- Program must be named : **case_reverse.py** and saved into **PyBC_EW1** folder
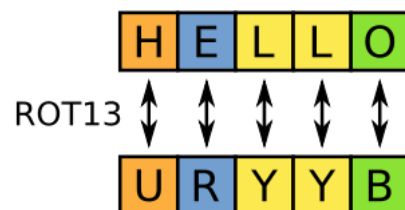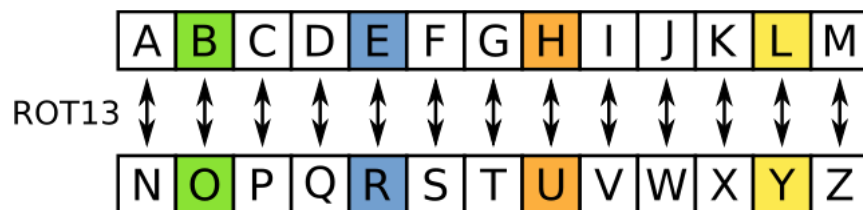
Hint :
- ❖ string
- ❖ ascii

Output :

```
$ python case_reverse.py aBcDeF
AbCdEf

$ python case_reverse.py
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.

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

Requirements :
- Program must be named : **encode_rot13.py** and saved into **PyBC_EW1** folder

Hint :
- ❖ string
- ❖ array
- ❖ ascii

Output :

$ python encode_rot13.py "This is a secret message."
Guvf vf n frperg zrffntr.

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 : **decode_rot13.py** and saved into **PyBC_EW1** folder

Hint :
- ❖ string
- ❖ array
- ❖ ascii

Output :f

$ python encode_rot13.py "Guvf vf n frperg zrffntr."
This is a secret message.