Lab 3 : Python Control Structure

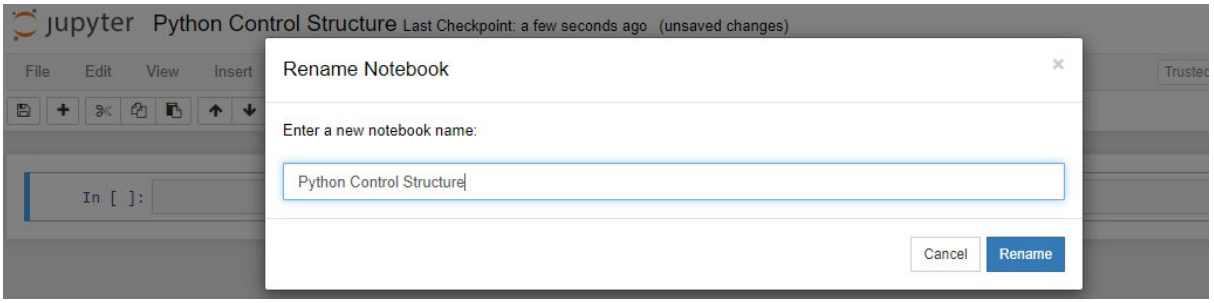
LAB 2: PYTHON CONTROL STRUCTURE

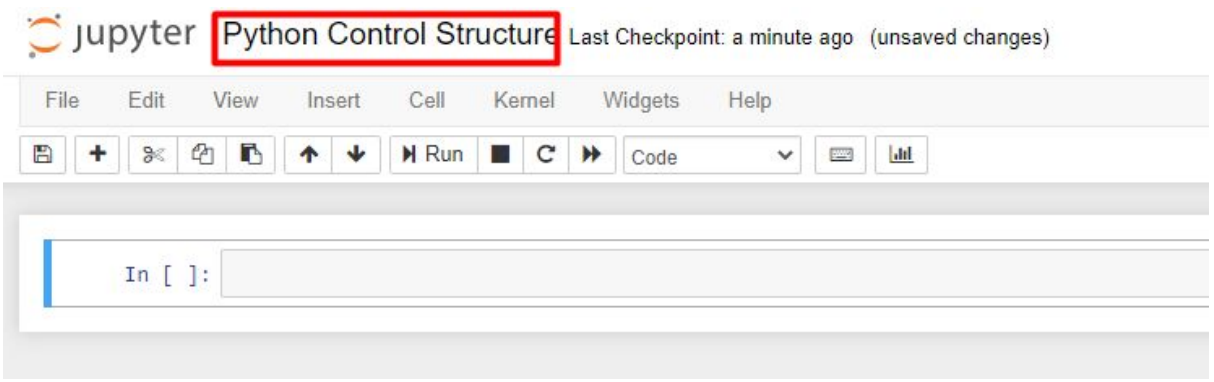
Objective:
In this lab we are going to code using Jupyter Notebook. Throughout this lab, we will cover python control structure.

Steps:

Install WinPython

1. Start Jupyter Notebook.
2. Create a new python 3 file.
3. Change the title to “Python Control Structure” and start code.





4. The code below is for decision-making when we only want code to be executed if a certain requirement is met. The program evaluates the condition and will execute statements if the condition result is True.

In [21]:
```
value = int(input('enter a number:'))

if value > 0:
    print('positive number')
elif value == 0:
    print('zero')
else:
    print('negative number')
```

```
enter a number:20
positive number
```

5. The for loop in Python is used to iterate over a sequence (list, tuple, string) or other iterable objects. Here, val is the variable that takes the value of the item inside the sequence on each iteration. Loop continues until we reach the last item in the sequence.

```
In [22]: car = ['BMW','Merc','Proton']
         for x in car:
             print(x)

BMW
Merc
Proton
```

```
In [24]: for x in 'Mercedes':
             print(x)

M
e
r
c
e
d
e
s
```

6. The while loop in Python is used to iterate over a block of code as long as the test expression (condition) is True. We generally use this loop when we don't know beforehand, the number of times to iterate.

```
In [39]: a = 1
         b = 10

         while a < b:
             print('a lower than b')
             a = a+1
```

```
a lower than b
a lower than b
a lower than b
a lower than b
a lower than b
a lower than b
a lower than b
a lower than b
a lower than b
```

7. In Python, function is a collection of associated statements that perform a specific task. Functions help break into smaller and more flexible parts of our program. As our system grows bigger and bigger, it's more structured and manageable by functions. It also prevents repetition, and makes code reusable.

```
In [43]: def my_function():
             """This function to
             print hello"""

             print('Hello')

         my_function()
```

```
Hello
```

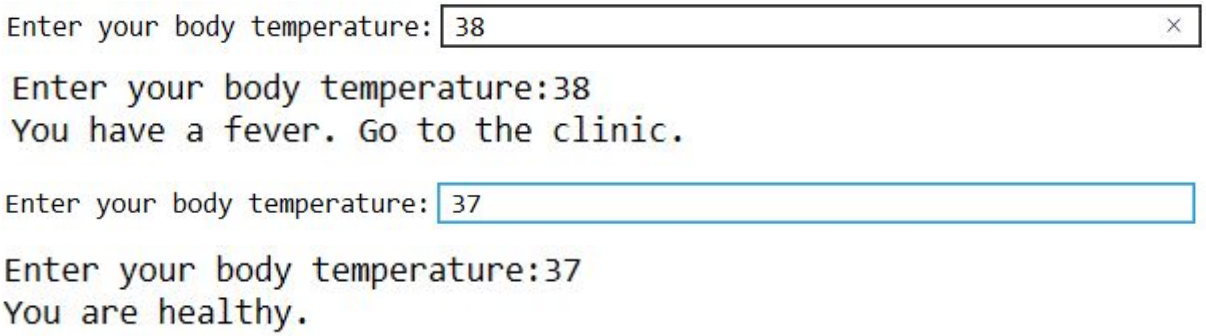
```
In [42]: def my_function():
             """This function to make
             addition between a and b"""
             a = int(input('a:'))
             b = int(input('b:'))
             print(a+b)

         my_function()
```

```
a:20
b:30
50
```

8. Python Exercise:
    a. Create a function to determine fever
    b. When the function is called
        i. Ask to enter body temperature
        ii. Answer whether or not you have a fever
            ➔ 38 and above - fever
            ➔ Below than 38 - healthy

The result as below :



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References:

1. https://github.com/winpython
2. https://jupyter.org/
3. https://www.w3schools.com/python/default.asp