

Lab 2 Network Programming

Monday, February 25, 2019 10:59 AM

How to Enter an input during the run-time???

```
x = input ("Please, enter the value of x")
```

How to write an if statement???

```
x = input ("Please, enter the value of x")
if (x>10):
    print ("the value is large")
else:
    print ("the value is small")
```

BUT the previous statements result in entering a string value, not Integer, that's why it's a must to cast the input value as follows:-

```
x = int (input ("Please, enter the value of x"))
if (x>10):
    print ("the value is large")
else:
    print ("the value is small")
```

for making a for loop:

```
In [2]: x = ['ali', 'ahmed', 'amr']
...: for i in x:
...:     print (i)
ali
ahmed
amr
```

i is the value of the element in the List:

- It's allowed to perform number of iterations as needed:
 - using "in range" keyword, and for all the elements in the list, len("list name") to perform number of iterations equal to the number of elements in the list.
 - By determining only one parameter of the "range", it performs iterations from 0 to the determined number **minus 1**

```
In [1]: x = ['ali', 'ahmed', 'amr']
...: for i in range((len(x))):
...:     print (x[i])
ali
ahmed
amr
```

- For specifying only from an index to **number of elements**

```
In [10]: x = ['ali', 'ahmed', 'amr']
...: for i in range (1,3):
...:     print (x[i])
ahmed
amr
```

- For step 2 in the loop:-

```
In [12]: x = ['ali', 'ahmed', 'amr']
...: for i in range (0,3,2):
...:     print (x[i])
ali
amr
```

- For get out of the loop when a certain value is met:-

```
In [19]: x = ['ali', 'ahmed', 'amr']
...: for i in range (0,3):
...:     if (x[i]=='ahmed'):
...:         break
...:     print (x[i])
ali
```

- For excluding some indexes with some values:-

```
In [23]: x = ['ali', 'ahmed', 'amr']
...: for i in range (0,3):
...:     if (x[i]=='ahmed'):
...:         pass
...:     else:
...:         print (x[i])
ali
amr
```

- Note that "for" loop determines the type of i depending on the type of the variable that the loop is done through:-

- For example:

- The previous loop examples were on a list, so I were Strings within that list.

- What if it's applied on a String???

- i are letters within that String.

```
In [24]: x = 'hello'
...: for i in x:
...:     print (i)
h
e
l
l
o
```

- How to define a method???

```
def "name of the method" (parameters) :
    statements
```

- How to call a method???

"name of the method" (input arguments)

- Example:-

```
In [29]: def sum():
...:     print (3+4)
...:
...:
...: sum()
7
```

- Another example

```
In [2]: def sum ():
...:     x = int (input ("Please enter the first value"))
...:     y = int (input ("Please enter the second value"))
...:     return x + y
...:
...: #how to call
...: z = sum()
...: print (z)

Please enter the first value3

Please enter the second value4
7
```

- How to declare a class???

- class "class name" :
variable declarations
methods declarations

- Example:

```
In [3]: class Math :
...:     def sum (self,x,y):
...:         return x+y
...:     def sub (self,x,y):
...:         return x-y
...:     def mul (self,x,y):
...:         return x*y
...:     def div (self,x,y):
...:         return x/y
```

- Note that the keyword "self" is a must to be the first parameter of any method in a class to refer to the actual value stored for the object of that class.

- How to use???
 - By defining an object, then use the methods using the object's name.

```
In [27]: class UserMath:
...:     def sum (self,x,y):
...:         return x+y
...:     def sub (self,x,y):
...:         return x-y
...:     def mul (self,x,y):
...:         return x*y
...:     def div (self,x,y):
...:         return x/y
...:
...:
...: m = UserMath()
...: z = m.sum(3,4)
...: print (z)
```