



Lab 3

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Python 3

## Python Statements

### if, elif, else statements

```
if case1:
    perform action1
else if case2:
    perform action2
else:
    perform action3
```

```
In [1]: x = 5

if x >= 0:
    print('x is greater than 0')

x is greater than 0
```

```
In [1]: x = True

if x==True:
    print('x is true')
else:
    print('x is not true')

x is true
```

```
In [5]: # Find out if X is positive, negative or zero, taking x as raw input

x = input("What is x?")

if x > 0:
    print('x is positive')
elif x == 0:
    print('x is zero')
else:
    print('x is negative')

What is x?5
```

```
-----
TypeError                                Traceback (most recent call last)
<ipython-input-5-b578cb001c43> in <module>()
      3 x = input("What is x?")
      4
----> 5 if x > 0:
      6     print('x is positive')
      7 elif x == 0:

TypeError: unorderable types: str() > int()
```

```
In [6]: # Find out if X is positive, negative or zero, taking x as raw input

x = int(input("What is x?"))

if x > 0:
    print('x is positive')
elif x == 0:
    print('x is zero')
else:
    print('x is negative')

What is x?5
x is positive
```

```
In [10]: #Finding maximum between 2 numbers:

n1 = int(input("Input number 1 \n"))
n2 = int(input("Input number 2 \n"))

if n1 > n2:
    print('n1=%d is maximum' %n1)
elif n1 < n2:
    print('n2=%d is maximum' %n2)
else:
    print('Both numbers are equal')
```

Input number 1

```

5
Input number 2
6
n2=6 is maximum

```

```

In [20]: # equality between 3 numbers

n1 = int(input("Input number 1 \n"))
n2 = int(input("Input number 2 \n"))
n3 = int(input("Input number 3 \n"))

if n1 >= n2 and n1 >= n3:
    print ('%d is maximum' % n1)
elif n2 >= n1 and n2 >= n3:
    print ('%d is maximum' % n2)
elif n3 >= n1 and n3 >= n2:
    print ('%d is maximum' % n3)

#if n1 >= n2 & n1 >= n3 will also work

Input number 1
4
Input number 2
5
Input number 3
6
6 is maximum

```

## for Loops

```

for item in object:
    statement for to do stuff

```

```

In [25]: num_list = [1,2,3,4,5]

for num in num_list:
    print (num)

1
2
3
4
5

```

```

In [26]: num_list = [1,2,3,4,5]

for x in num_list:
    print (x)
    print ('whats up?')

1
whats up?
2
whats up?
3
whats up?
4
whats up?
5
whats up?

```

```

In [28]: #Finding number is odd or even

odd_even = [1,2,3,4,5,6,7,8,9,10]
for num in odd_even:
    if num % 2 == 0:
        print ('%d is even' %num)
    elif num % 2 == 1:
        print ('%d is odd' %num)

1 is odd
2 is even
3 is odd
4 is even
5 is odd
6 is even
7 is odd
8 is even
9 is odd
10 is even

```

```

In [44]: # For each number in the List below, print it the same number of times as its value. For e.g print 5, f

num_list = [7,5,4,10,5]

for num in num_list:
    j = num
    for i in range(0,j):
        print(num, end=' ')
    print()

# Mind what 'in range' is doing here

7 7 7 7 7 7
5 5 5 5 5
4 4 4
10 10 10 10 10 10 10 10 10 10
5 5 5 5 5

```

```
4 4 4 4
10 10 10 10 10 10 10 10 10
5 5 5 5 5
```

```
range(0,5) is 0,1,2,3,4
```

```
In [3]: #print first n integers:
n = 10

for i in range(0,10):
    print (i)
```

```
0
1
2
3
4
5
6
7
8
9
```

```
In [4]: n = 10

for i in range (0,10,2):
    print (i)
```

```
0
2
4
6
8
```

```
In [5]: #Print first n integers starting from 1:
n = 10
for i in range (0,10):
    print(i+1)
```

```
1
2
3
4
5
6
7
8
9
10
```

```
In [6]: #Print sum of first n integers:
n = 10
sum = 0
for i in range(0,n):
    sum = sum + (i+1)

print(sum)
```

```
55
```

```
In [3]: #Create a triangle which will print no of 1,s equal to the row number
```

```
n = 4

for i in range(0,n):
    list1 = [1]
    list1 = list1 * (i+1)
    print (list1)
```

```
[1]
[1, 1]
[1, 1, 1]
[1, 1, 1, 1]
```

## while Statement

```
In [2]: x = 0

while x <=10:
    print ('The current value of x is %d' %x )
    x = x+1
```

```
The current value of x is 0
The current value of x is 1
The current value of x is 2
The current value of x is 3
The current value of x is 4
The current value of x is 5
The current value of x is 6
The current value of x is 7
The current value of x is 8
The current value of x is 9
The current value of x is 10
```

```
In [3]: x = 0
```

```
while x <=10:
    print ('The current value of x is %d' %x )
    x = x+1
else:
    print ('While loop successfully executed')
```

```
The current value of x is 0
The current value of x is 1
The current value of x is 2
The current value of x is 3
The current value of x is 4
The current value of x is 5
The current value of x is 6
The current value of x is 7
The current value of x is 8
The current value of x is 9
The current value of x is 10
While loop successfully executed
```

In [4]: *# Print from 1 to 10 & let the user know when its divisible by 5 or not*

```
x = 1
while x <=10:
    print ('Value of x is %d' %x)

    if x % 5 == 0:
        print ('Whoa! %d divisible by 5' %x)
    else:
        print ('%d is not divisible by 5' %x)

    x = x + 1
```

```
Value of x is 1
1 is not divisible by 5
Value of x is 2
2 is not divisible by 5
Value of x is 3
3 is not divisible by 5
Value of x is 4
4 is not divisible by 5
Value of x is 5
Whoa! 5 divisible by 5
Value of x is 6
6 is not divisible by 5
Value of x is 7
7 is not divisible by 5
Value of x is 8
8 is not divisible by 5
Value of x is 9
9 is not divisible by 5
Value of x is 10
Whoa! 10 divisible by 5
```

In [12]: *# Start printing from 1 till the the number occurs which  
#is divisible by 5 or its Less than 10*

```
x = 0

while x <= 10:
    print ('The value of x is %d' %x)
    x = x + 1

    if x % 5 ==0:
        print ('The first x divisbel by 5 is %d' %x)
        break
    else:
        print ('Continuing')
        continue
```

```
The value of x is 0
Continuing
The value of x is 1
Continuing
The value of x is 2
Continuing
The value of x is 3
Continuing
The value of x is 4
The first x divisbel by 5 is 5
```