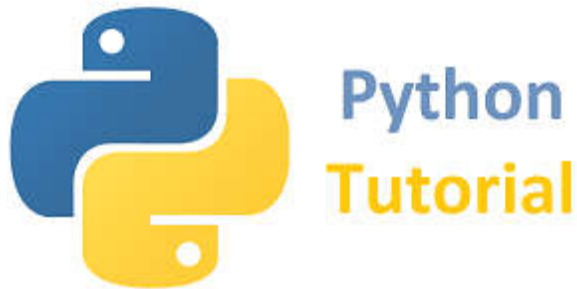# If, for, and While loop in Python

Outlines

- If statement
- Different operators (>= == != and or)
- For Loop
- Range function
- While Loop

If statement:

Write a program that asks user to enter a number and the program should then tell in number is odd or even.

```
In [1]:  # How to ask a user to print a number
         input("Enter a number: ")

         Enter a number: 4

Out[1]:  '4'
```

```
In [2]:  num = input("Enter a number: ")
         num = int(num) # convert a number to a integer

         if num%2==0:
             print("number is even")
         else:
             print("number is odd")

         Enter a number: 2
         number is even
```

```
In [3]:  num = input("Enter a number: ")
         num = int(num) # convert a number to a integer

         if num%2==0:
             print("number is even")
         else:
             print("number is odd")
```

```
Enter a number: 7
number is odd
```

Different operators (> == != and or)

```
In [4]:  4==4
```

Out[4]: True

```
In [5]:  4!=5 # not equal
```

Out[5]: True

```
In [6]:  2<3
```

Out[6]: True

```
In [7]:  2>=2
```

Out[7]: True

```
In [8]:  3<=4
```

Out[8]: True

```
In [9]:  # check two conditions with and operator
         3>2 and 4>1
```

Out[9]: True

For and operator both of the conditions must be True

```
In [10]:  3>2 or 1>5
```

Out[10]: True

For or operator at least one of the conditions must be True

```
In [12]:  not 4==4
```

Out[12]: False

Write a program that asks user to enter dish name and it should print which cuisine is that

dish

```
In [13]: indian=['samosa','daal','naan']
         chinese=['egg role','pot sticker','fried rice']
         italian=['pizza','pasta','risotto']
         dish=input("Enter a dish name: ")

         if dish in indian:
             print('indian')
         elif dish in chinese:
             print('chinese')
         elif dish in italian:
             print('italian')
         else:
             print('unknown dish')
```

```
Enter a dish name: pasta
italian
```

For loop:

Store monthly expenses in a list and find out total expenses for all months

```
In [14]: # print total expenses without for loop
         exp = [2340,2500,2100,3100,2980]
         total = exp[0]+exp[1]+exp[2]+exp[3]+exp[4]
         print(total)
```

```
13020
```

If your list has 100 items you cannot do that.

```
In [18]: exp = [2340,2500,2100,3100,2980]

         total = 0
         for item in exp:
             total = total+item

         print(total)
```

```
13020
```

```
exp = [2340, 2500, 2100, 3100, 2980]
total = 0
item = exp[0]              # item = 2340
total = total + item       # total = 2340
item = exp[1]              # item = 2500
total = total + item       # total = 4840
item = exp[2]              # item = 2100
total = total + item       # total = 6940
item = exp[3]              # item = 3100
total = total + item       # total = 10040
item = exp[4]              # item =  2980
total = total + item       # total = 13020
```

Range function

In [19]:
```python
# print 1 to 10 using range()
# use shift + tab after a function to show you the syntax
for i in range(1,11):
    print(i)
```

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

In [20]:
```python
# print square of all the numbers from 1 to 10
for i in range(1,11):
    print(i*i)
```

```
1
4
9
16
25
36
49
64
81
100
```

In our monthly expense example, print month number along with expense and then in the end print total expense.

```
In [24]: exp=[2340,2500,2100,3100,2980]

         total=0
         for i in range(len(exp)):
             print('Month: ',(i+1),'Expense: ',exp[i])
             total = total + exp[i]
         print('Total expense is: ',total)
```

```
Month:  1 Expense:  2340
Month:  2 Expense:  2500
Month:  3 Expense:  2100
Month:  4 Expense:  3100
Month:  5 Expense:  2980
Total expense is:  13020
```

```
In [25]: exp=[2340,2500,2100,3100,2980]
         len(exp)
```

Out[25]: 5

Print square of numbers between 1 to 5 EXCEPT even numbers

```
In [28]: for i in range(1,6):
             if i%2==0:
                 continue
             print(i*i)
```

```
1
9
25
```

Once you are in if condition, continue jumb back to for loop for the next iteration.

While Loop

```
In [31]: i = 1
         while i<=3:
             print(i)
             i=i+1
```

```
1
2
3
```

While loop takes only one condition and until that condition is satisfied to be True it wil keep on iterating

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