for loops

```for range:

        # indentation
        ....
        ....

#out of loop```

 break

---

Generators : `range`

---

```
In [1]: # Generatos
         range(10)
         # stop : default is 1 and start at 0
         # start stop , step
```

```
Out[1]:  range(0, 10)
```

```
In [2]:  #
         list(range(10))
```

```
Out[2]:  [0, 1, 2, 3, 4, 5, 6, 7, 8, 9]
```

- Create a list from 0 - 100 using range
- Create a list of even number in the range of 0 - 100
- Create a list of odd number in the range of 0 - 100
- Create a list of number from 300 - 200

```
In [13]:   # 0 - 100
           print('Range of number from 0 - 100:')
           print(list(range(100)))
           print('='*79)
           # 0 - 100 even numbers
           print('list of even number in 0 - 100')
           print(list(range(2,100,2)))
           print('='*79)
           #  0 - 100 odd numbers
           print('list of odd number in 0 - 100')
           print(list(range(1,100,2)))
           print('='*79)
           #  300 - 200
           print('list of number from 300 - 200')
           print(list(range(300,200,-1)))
           print('='*79)
```

```
Range of number from 0 - 100:
[0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21,
22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41,
42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61,
62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81,
82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99]
===============================================================================
list of even number in 0 - 100
[2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38, 40, 4
2, 44, 46, 48, 50, 52, 54, 56, 58, 60, 62, 64, 66, 68, 70, 72, 74, 76, 78, 80,
82, 84, 86, 88, 90, 92, 94, 96, 98]
===============================================================================
list of odd number in 0 - 100
[1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 31, 33, 35, 37, 39, 41,
43, 45, 47, 49, 51, 53, 55, 57, 59, 61, 63, 65, 67, 69, 71, 73, 75, 77, 79, 81,
83, 85, 87, 89, 91, 93, 95, 97, 99]
===============================================================================
list of number from 300 - 200
[300, 299, 298, 297, 296, 295, 294, 293, 292, 291, 290, 289, 288, 287, 286, 28
5, 284, 283, 282, 281, 280, 279, 278, 277, 276, 275, 274, 273, 272, 271, 270, 2
69, 268, 267, 266, 265, 264, 263, 262, 261, 260, 259, 258, 257, 256, 255, 254,
253, 252, 251, 250, 249, 248, 247, 246, 245, 244, 243, 242, 241, 240, 239, 238,
237, 236, 235, 234, 233, 232, 231, 230, 229, 228, 227, 226, 225, 224, 223, 222,
221, 220, 219, 218, 217, 216, 215, 214, 213, 212, 211, 210, 209, 208, 207, 206,
205, 204, 203, 202, 201]
===============================================================================
```

for

```
In [15]: for i in range(10): # this for ten iteration
             # indentatiation
             # 1 tab
             # ...
             # ...
             print(i,'Inside the loop')
         # out of the loop
         print('Out of the loop')
```

```
0 Inside the loop
1 Inside the loop
2 Inside the loop
3 Inside the loop
4 Inside the loop
5 Inside the loop
6 Inside the loop
7 Inside the loop
8 Inside the loop
9 Inside the loop
Out of the loop
```

Write a program to print your name 10 times using for loop but iteration should be in reverse order starting from 10 to 1

```
In [16]: for i in range(10,0,-1):
             print(i,'Srikanth')
```

```
. . .
```

```
In [19]: # create a list
         my_list = ['Innomatics','Technology','Hub',1,2,3]
         for i in range(len(my_list)):
             print(i,my_list[i])
```

```
0 Innomatics
1 Technology
2 Hub
3 1
4 2
5 3
```

```
In [20]: for i in my_list:
             print(i)
```

```
Innomatics
Technology
Hub
1
2
3
```

Create 100 random number in the range of 0 to 100

random

In [21]: `import` random

In [25]:
```python
num = random.randint(0,100)
num
```

Out[25]: 29

Create emtpy list **rand** and append the random integer number using for loop

In [27]:
```python
rand = []
for i in range(100):
    num = random.randint(0,100)
    rand.append(num)

print(rand)
```

```
[64, 22, 5, 2, 81, 78, 70, 60, 47, 47, 5, 11, 7, 99, 90, 68, 4, 9, 73, 70, 2,
6, 90, 29, 27, 81, 100, 27, 55, 45, 99, 90, 8, 73, 12, 57, 92, 63, 60, 70, 20,
32, 90, 38, 29, 30, 40, 30, 89, 23, 36, 43, 59, 87, 85, 61, 53, 58, 55, 13, 30,
80, 21, 74, 63, 97, 94, 46, 63, 82, 34, 49, 74, 83, 93, 56, 71, 73, 64, 7, 86,
39, 71, 45, 13, 47, 7, 48, 48, 80, 41, 24, 16, 79, 0, 88, 75, 90, 85, 32]
```

- find and create a list of even number in rand
- find and create a list of number divisible by 5 in rand

In [28]:
```python
# even number
even = []
for i in rand:
    if i != 0:
        if i %2 == 0:
            even.append(i)
print('Even number are :\n',even)
print('='*79)


# divisible by 5
div5 = []
for i in rand:
    if i != 0:
        if i %5 == 0:
            div5.append(i)
print('Divisible by 5 number are :\n',div5)
print('='*79)
```

```
Even number are :
 [64, 22, 2, 78, 70, 60, 90, 68, 4, 70, 2, 6, 90, 100, 90, 8, 12, 92, 60, 70, 2
0, 32, 90, 38, 30, 40, 30, 36, 58, 30, 80, 74, 94, 46, 82, 34, 74, 56, 64, 86,
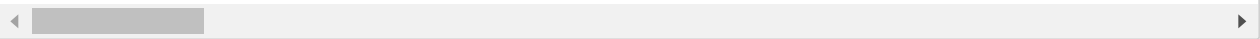48, 48, 80, 24, 16, 88, 90, 32]
===============================================================================
Divisible by 5 number are :
 [5, 70, 60, 5, 90, 70, 90, 100, 55, 45, 90, 60, 70, 20, 90, 30, 40, 30, 85, 5
5, 30, 80, 45, 80, 75, 90, 85]
===============================================================================
```

In [29]:
```python
# text
text ='''
Over six years ago, in December 1989, I was looking for a "hobby" programming pro
'''
```

- find the words that starting with 'd'
- find the words that endswith g

```
In [34]:   # cleaning
           text1 = text.lower()
           text1 = text1.replace('\n','')
           text1 = text1.replace(':','')
           text1 = text1.replace(',','')
           text1 = text1.replace('.','')
           text1 = text1.replace('(','')
           text1 = text1.replace(')','')
           # splitting into words
           words = text1.split()
           print('List of words in text:')
           print(words)
           # finding words start and ends with d and g
           starts = []
           ends = []
           for i in words:
               if i.startswith('d'):
                   starts.append(i)

               if i.endswith('g'):
                   ends.append(i)
           print('='*79)
           print('words starts with d is :\n',starts)
           print('='*79)
           print('words ends with g is :\n',ends)
```

```
List of words in text:
['over', 'six', 'years', 'ago', 'in', 'december', '1989', 'i', 'was', 'lookin
g', 'for', 'a', '"hobby"', 'programming', 'project', 'that', 'would', 'keep',
'me', 'occupied', 'during', 'the', 'week', 'around', 'christmas', 'my', 'offic
e', 'a', 'government-run', 'research', 'lab', 'in', 'amsterdam', 'would', 'be',
'closed', 'but', 'i', 'had', 'a', 'home', 'computer', 'and', 'not', 'much', 'el
se', 'on', 'my', 'hands', 'i', 'decided', 'to', 'write', 'an', 'interpreter',
'for', 'the', 'new', 'scripting', 'language', 'i', 'had', 'been', 'thinking',
'about', 'lately', 'a', 'descendant', 'of', 'abc', 'that', 'would', 'appeal',
'to', 'unix/c', 'hackers', 'i', 'chose', 'python', 'as', 'a', 'working', 'titl
e', 'for', 'the', 'project', 'being', 'in', 'a', 'slightly', 'irreverent', 'moo
d', 'and', 'a', 'big', 'fan', 'of', 'monty', "python's", 'flying', 'circus']
===============================================================================
words starts with d is :
 ['december', 'during', 'decided', 'descendant']
===============================================================================
words ends with g is :
 ['looking', 'programming', 'during', 'scripting', 'thinking', 'working', 'bein
g', 'big', 'flying']
```

```
In [ ]:
```