- Basic syntax
- conditional statements
- try-exception
- functions
- loop
    - for
    - while

$For\ loop$

- you will be in the loop
- when you will enter into the loop
- how much time you will stay in the loop
- how you will come out of the from the loop

- intialization
- increment/ decrement
- condition to stop the loop

In [ ]:
```
# I want to print fisrt 10 numbers
# intial point: 0
# increment
# cond=10
```

In [ ]:
```
i=0
i=1
i=2
i=3
i=4
```

$pattern - 1$

for i in range(stop):

- in the bracket if we have only single value that is consider as stop value
- the default start value is =0
- python index always start with :0
- if direction sign is not mentioned : increment (+) sign
- if direction is postive side then end=stop-1

In [4]:
```
for i in range(20):
    print(i)

# start=0
# direc=+
# end=stop-1=20-1=19
```

```
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
```

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

In [5]:
```
print(0)
print(1)
print(2)

# generalised: print(i)
```

```
0
1
2
```

In [ ]:
```
- intial

- increment/decrement

- condition

for i in range(20)
```

In [ ]:

In [8]:
```
print(0,end=' ')
print(1,end=' ')
print(2)   # 0 1 2

#print(i,end=' ')
```

```
0 1 2
```

In [9]:
```
for i in range(20):
    print(i,end=' ')
```

```
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19
```

$pattern-2$

for i in range(start,stop)

- start: start of the loop, intial point
- direction sign not mentioned: +ve direction i.e.increment
- end=stop-1

In [11]:
```
for i in range(2,7):
    print(i,end=' ')
# start=10  pos  end=20-1=19
```

```
2 3 4 5 6
```

$pattern-3$

for i in range(start,stop,step)

- start: start of the loop, intial point
- direction: what is sign of step value, that is the direction

```
- direction will not decide by start and stop value

- direction will provided by step value
```

- if step size is postive direction

```
  end= stop-1
```

- if step size is negative direction

```
 end=stop+1
```

In [12]:
```
for i in range(2,20,2):  # (start,stop,step)
    print(i,end=' ')

# start=2
# direction: step size=+2
# end=stop-1=20-1=19

# 2  4  6  8  10  12  14  16  18  <20>
```

```
2 4 6 8 10 12 14 16 18
```

In [13]:
```
for i in range(-1,-10,-1):
    print(i,end=' ')

# start= -1
# direction: step=-1    negative
# end= stop+1 = -10+1=-9
# is this possible or not?
```

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

In [14]:
```
for i in range(-1,-10,1):
    print(i,end=' ')

# start=-1
# direc= step=+1
# end=stop-1= -10-1=-11
# possible/np
```

In [15]:
```
for i in range(8,20,-2):
    print(i)

# start=8
# direc=step=-2  : -neg
# end=stop+1=20+1=21
```

In [ ]:
```
range(3,25,3)   # start=3  pos  end =25-1=24 p
range(3,25,-3)  # 3        neg  end=25+1=26 np
range(3,-25,3)  # np
range(3,-25,-3) # start=3   neg   end= -25+1=-24
range(-3,25,3)  # p
range(-3,-25,3) # np
range(-3,25,-3) # np
range(-3,-25,-3) # p
```

In [16]:
```
for i in range(3,-25,-3): print(i,end=' ')
```

```
3 0 -3 -6 -9 -12 -15 -18 -21 -24
```

In [ ]:
```
Two numbers are input through the keyboard into two locations C and D. Writ
program to interchange the contents of C and D.
```

In [17]:
```
a=100
b=200
a=b
a
```

Out[17]: 200

In [ ]:
```
If a five-digit number is input through the keyboard, write a program to rev
number.
```

In [18]:
```
12345//10
```

Out[18]: 1234

In [19]:
```
12345%10
```

Out[19]: 5

In [ ]:
```
In a town, the percentage of men is 52. The percentage of total literacy is
percentage of literate men is 35 of the total population, write a program to
number of illiterate men and women if the population of the town is 80,000.
```

In [20]:
```
men= 52*80000/100
female=48*80000/100
print(men,female)
```

```
41600.0 38400.0
```

In [21]:
```
liter=48*80000/100
liter
```

Out[21]: 38400.0

In [ ]:
```
48
35 men
13 female
```

In [ ]:
```
A cashier has currency notes of denominations 10, 50 and 100. If the amount
withdrawn is input through the keyboard in hundreds, find the total number o
notes of each denomination the cashier will have to give to the withdrawer.
```

In [ ]:
```
180
100-1
50-1
10-3
```

In [22]:
```
print(10,end=' ')
print(20)
```

```
10 20
```

In [27]:
```
print('name',':','python')
```

```
name : python
```

In [28]:
```
print('name','python',sep=':')
```

```
name:python
```

In [ ]:
```
exam-1:   total marks =20    got the marks=10    10%(10)=1
exam-2:   total marks=500    got the marks =200  20%(200)=40
```

In [ ]:
```
12371
23482
```

In [29]:
```
Write a program that asks the user for two numbers and prints
Close if the numbers are within .001
of each other and Not close otherwise.


3-2=1
```

```
  Cell In[29], line 1
    Write a program that asks the user for two numbers and prints
          ^
SyntaxError: invalid syntax
```

In [ ]:
```
A year is a leap year if it is divisible by 4, except that years divisible
they are also divisible by 400. Write a program that asks the user for a ye
is a leap year or not.
```

In [ ]:
```

```