Constructor Method (OR) Constructor

A constructor is special method, which is executed on creation of object.
Constructor is an instance method.
Constructor is used to define initial properties of object or define properties of object or create instance variables of object.
The name of constructor method is __init__(self).
Any method which is prefix and suffix with __ is called magic method.

A constructor is define,

1. Without parameters
2. With parameters

Example

```
class Product: # Creating one data type
    def __init__(self): # constructor method
        print("product object is created...")



p1=Product() # Creating object of product class
p2=Product() # Creating object of product class
```

Output

product object is created...
product object is created...

Example:

```
class Student: # Creating Data type/Defining data type
    def __init__(self):
        self.rollno=None # I.V
```

```
        self.name=None # I.V
        self.course=None # I.V
        x=None # L.V


stud1=Student()
stud2=Student()
comp1=complex()
print(stud1.rollno,stud1.name,stud1.course)
print(stud2.rollno,stud2.name,stud2.course)
print(comp1.real,comp1.imag)
```

Output

```
None None None
None None None
0.0    0.0
```

Example:

```
class Student: # Creating Data type/Defining data type
    def __init__(self,r,n,c):
        self.rollno=r  # I.V
        self.name= n# I.V
        self.course=c  # I.V
        x=None # L.V


stud1=Student(101,"naresh","python")
stud2=Student(102,"suresh","java")
comp1=complex()
print(stud1.rollno,stud1.name,stud1.course)
print(stud2.rollno,stud2.name,stud2.course)
print(comp1.real,comp1.imag)
```

Output:

```
101 naresh python
```

102 suresh java
0.0 0.0

Constructor without parameters does not receives values.
Constructor with parameters receives values.

Example:

```
class Date: # UDT
    def __init__(self,d=0,m=0,y=0):
        self.dd=d
        self.mm=m
        self.yy=y


d1=Date(20,2,2024)
print(d1.dd,d1.mm,d1.yy)
d2=Date()
print(d2.dd,d2.mm,d2.yy)
c1=complex()
print(c1.real,c1.imag)
c2=complex(1.5,2.5)
print(c2.real,c2.imag)
```

Output

20 2 2024
0 0 0
0.0 0.0
1.5 2.5

Example:

```
class Employee:  # Creating Data type
    def __init__(self,e,n,s):
        self.empno=e
        self.ename=n
```

```
        self.salary=s
    def print_employee(self):
        print(self.empno,self.ename,self.salary)



emp1=Employee(101,"naresh",6000)
emp1.print_employee()
emp2=Employee(102,"suresh",9000)
emp2.print_employee()
```

Output

101 naresh 6000

102 suresh 9000

Example:

```
class Player:
    def __init__(self,n,s):
        self.name=n
        self.score=s
    def getName(self):
        return self.name
    def getScore(self):
        return self.score
    def setScore(self,s):
        self.score=s


n=int(input("How many players?"))
player_list=[]
for i in range(n):
    name=input("Enter Name")
    score=int(input("Etner Score"))
    p=Player(name,score)
    player_list.append(p)
```

```
print(player_list)
for p in player_list:
    name=p.getName()
    score=p.getScore()
    print(name,score)
```

Output

How many players?2
Enter Namerohit
Etner Score100
Enter Namerahul
Etner Score20
[<__main__.Player object at 0x000001C6935DDB50>,
<__main__.Player object at 0x000001C6935DDCD0>]
rohit 100
rahul 20

What is difference between constructor method and instance method?

Constructor method	**Instance method**
Constructor name must be __init__	Instance method name can be any name
This method is executed automatically on creation of object.	This method is invoked explicitly with object name.
The purpose of constructor defining initial properties of object (OR) initialization of object	The purpose of instance method is setter and getter.
Within class only one constructor is defined	A class contain more than one instance method.