Object

Object is having states and behaviors in which state means what does it has and behavior means what does it do. for example a pen has

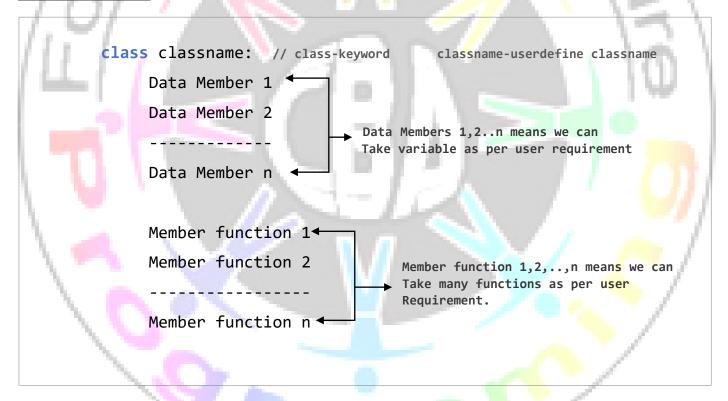**States**:*ink,nib,needle,cap etc*
Behaviors:*Writing*.

- Object is an instance of a class.
- Object comprises both data members and methods.
- Object is created from a class.

Class

1.It is a collection of **data members** and **member functions**.
2.**Data members** are the variable used inside class.
3.**Member functions** are the function used inside class.
4.It is also called **Userdefined data type**.
5.**class** keyword is used to create class.

Syntax of class

```
class classname:  // class-keyword    classname-userdefine classname

    Data Member 1
    Data Member 2
    -------------
    Data Member n
```

Data Members 1,2..n means we can
Take variable as per user requirement

```
    Member function 1
    Member function 2
    -----------------
    Member function n
```

Member function 1,2,..,n means we can
Take many functions as per user
Requirement.

Create class
#creating class

```
class Student:
    #defining class variables
    name="Rocky"
    roll=205
```

- Here Student is class and name and roll are variables.

Create object of class

- We can create object of class by using class name.
- There is no need of new keyword like java in Python to create object.

Syntax:

> *obj_name=class_name()*

For Example:

> *s1=Student()*

Here s1 is object of class Student.

Accessing variable of class

- We can access the variables of class by using dot(.) operator with object.
- We can also access function of a class by using dot(.) operator.

Example:

> **#creating class**
>
> *class Student:*
>
> > *#defining class variables*
> >
> > *name="Rocky"*
> >
> > *roll=205*
>
> > *#creating object*
> >
> > *s1=Student()*
> >
> > *#Accessing class variable*
> >
> > *print("Name:",s1.name)*
> >
> > *print("Rollno:",s1.roll)*

"""

Output

Name: Rocky

Rollno: 205

"""

class with variable and function

```python
#creating class

class Student:

    #defining class variables

    name="Rocky"

    roll=205

    marks=85.6

    #defining function

    def showInfo(self):

        print("Name:", self.name)

        print("Rollno:",self.roll)

        print("Marks:",self.marks)


    #creating object

    s1=Student()

    #Calling function of class

    s1.showInfo()


"""

**Output**

Name: Rocky

Rollno: 205

Marks: 85.6

"""
```

Here to access a class variables inside function self keyword is used because self refers to the current class object.