Date : 31th May 2021 **Hardik Savaliya**

:: Day - 5 ::

--Work Summary--

- **Today it was the Fifth day of our Internship.**
- **Taken by : Devanshi Prajapati**

What we learnt ?

- In today's session of python for Django we learned about class concept in object oriented programming language.
- Firstly we learned 'what is class and why it is so important for any OOP languages?'.
- Then we learned how to define any class in python and basic syntax of defining class in python programming language.
  Syntax: "class Myclass:"
- Classes are mostly used to contain data field to store the data and defining various useful methods'.
- Then we learned how to access class field like variables and it defined methods to perform any according tasks. This requirement is fulfilled by Object of that class which is also known as instance of class which provide access for any element or method of that related class.
  Syntax: "object = Myclass()"
- Then we perform our first program of this session related to class to understand well practically.
- Then we differentiate method and function and understand what are various difference between methods and functions.

- Then we get to know about 'self' argument which are mostly used in method of class call initializer this method is also known as '__init__' method its work is to initialize the variable of class.
- This __init__ method is also called constructor of class. There are mainly two type of constructor in python.
    1. **Default Constructor**
    2. **Parameterized Constructor**
- Then we learned how to use and when to use these above mentioned constructors by taking one example.
- Then we got introduced to the most important and enrich concept of OOP known as 'INHERITANCE' and its various types. It allows user to make general class and then extend that class in more specialized class (parent-child class concept).

  Syntax: class Subclass(Superclass):

  #body
- Types:
    1. Single-Level Inheritance
    2. Multi-level Inheritance
    3. Multiple Inheritance
    4. Hierarchical Inheritance
    5. Hybrid Inheritance
- The we learned these types of inheritance deeply with example of each type which help use to make understand very well and conceptual way.
- Then we learned 2nd most important topic of OOP called **'Polymorphism'.**
    1. **Overriding Methods**
    2. **Overloading Methods**

• Tasks:

1. **Create a class cal1 that will calculate sum of three numbers. Create setdata() method which has three parameters that contain numbers. Create display() method that will calculate sum and display sum.**

```
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PS E:\MyProjects\Online Hall Management System\Internship-AkashTechnolabs\Tasks\task-5> python 01.py
10+20+30 = 60
PS E:\MyProjects\Online Hall Management System\Internship-AkashTechnolabs\Tasks\task-5>
```

2. **Create a class cal2 that will calculate area of a circle. Create setdata() method that should take radius from the user. Create area() method that will calculate area . Create display() method that will display area .**

```
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PS E:\MyProjects\Online Hall Management System\Internship-AkashTechnolabs\Tasks\task-5> python 02.py
Area of circle with radius 3 =28.27
PS E:\MyProjects\Online Hall Management System\Internship-AkashTechnolabs\Tasks\task-5>
```

3. **Create a class cal3 that will calculate simple interest. Create constructor method which has three parameters .Create calInterest() method that will calculate Interest . Create display() method that will display Interest.**

```
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PS E:\MyProjects\Online Hall Management System\Internship-AkashTechnolabs\Tasks\task-5> python 03.py
enter p:500
enter r:1.2
enter n:2
for p=500,r=1.2,n=2 simple interest = 12.00
PS E:\MyProjects\Online Hall Management System\Internship-AkashTechnolabs\Tasks\task-5>
```

4. Create a class cal4 that will calculate square of a number. Create setdata() method which has one parameters that contain number. Create display() method that will calculate sum.(Function should return value)

```
PS E:\MyProjects\Online Hall Management System\Internship-AkashTechnolabs\Tasks\task-5> python 04.py
enter any number:5
square of value 5 is 25
PS E:\MyProjects\Online Hall Management System\Internship-AkashTechnolabs\Tasks\task-5>
```

5. Consider an employee class, which contains fields such as name and designation. And a subclass, which contains a field salary. Write a program for inheriting this relation.

```
PS E:\MyProjects\Online Hall Management System\Internship-AkashTechnolabs\Tasks\task-5> python 05.py
-------Employee class display()-------
name :  ABCDEFG
designation :  HR Manager
-------Subclass display()---------
name :  ABCDEFG
designation :  HR Manager
salary :  10000
PS E:\MyProjects\Online Hall Management System\Internship-AkashTechnolabs\Tasks\task-5>
```

6. Create a class cal5 that will calculate area of a rectangle. Create constructor method which has two parameters .Create calArea() method that will calculate area of a rectangle. Create display() method that will display area of a rectangle.

```
PS E:\MyProjects\Online Hall Management System\Internship-AkashTechnolabs\Tasks\task-5> python 06.py
enter length:10
enter width:20
Area of rectangle with length=10 and width =20 is 200
PS E:\MyProjects\Online Hall Management System\Internship-AkashTechnolabs\Tasks\task-5>
```

7. **Create a class cal6 that will calculate area of a square. Create setdata() method that should take length from the user. Create area() method that will calculate area . Create display() method that will display area .**

```
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PS E:\MyProjects\Online Hall Management System\Internship-AkashTechnolabs\Tasks\task-5> python 07.py
enter length:40
Area of square with length = 40 is 1600
PS E:\MyProjects\Online Hall Management System\Internship-AkashTechnolabs\Tasks\task-5>
```

8. **Write a program with use of inheritance: Define a class publisher that stores the name of the title. Derive two classes book and tape, which inherit publisher. Book class contains member data called page no and tape class contain time for playing. Define functions in the appropriate classes to get and print the details.**

```
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PS E:\MyProjects\Online Hall Management System\Internship-AkashTechnolabs\Tasks\task-5> python 08.py
----Publisher display()----
Name :  John Carter
----Book display()----
Name :  John Carter
Pages: 200
----Tape display()----
Name :  John Carter
Pages: 200
time :3 hrs
PS E:\MyProjects\Online Hall Management System\Internship-AkashTechnolabs\Tasks\task-5>
```

9. **Create a class called scheme with scheme_id, scheme_name,outgoing_rate, and message_charge. Derive customer class form scheme and include cust_id, name and mobile_no data.Define necessary functions to read and display data.**

```
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PS E:\MyProjects\Online Hall Management System\Internship-AkashTechnolabs\Tasks\task-5> python 09.py
Scheme id      :  1
Scheme name    :  ABC
Outgoing rate  :  20.4
Message Charge :  10000
Customer id :  10
Customer name :  PQR
Customer mobile :  1234569878
PS E:\MyProjects\Online Hall Management System\Internship-AkashTechnolabs\Tasks\task-5>
```

10. **Create a arith class. The class should have a parameterized constructor and methods to add, subtract and multiply two numbers and to return the answers.**

```
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PS E:\MyProjects\Online Hall Management System\Internship-AkashTechnolabs\Tasks\task-5> python 10.py
enter a: 10
enter b: 15
10 + 15 = 25
10 - 15 = -5
10 * 15 = 150
PS E:\MyProjects\Online Hall Management System\Internship-AkashTechnolabs\Tasks\task-5>
```