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Day -5

❖ Day-5 : What have 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?'. Which help us to make ourselves comfortable before diving more deeply in it.
- 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'. Which is ability to use common interfaces for multiple form
    1. Overriding Methods
    2. Overloading Methods
- We performed some example related to both type of polymorphism. And dive into base of OOP.

This Internship is Task Based Internship. So at the end of this session we got one Task.

Github Task-5 Link :- https://github.com/Bibinbiju9873/Internship-AkashTechnoLabs/tree/main/Tasks/Day-5

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.

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 .

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

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)
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.

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.

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 .

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.

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.

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

❖ Output :-

```
D:\STUDY\Internships & Projects\Internship-Akash-Technolabs\Day-5_OOP_based_tasks>python task-1.py
10+20+30 = 60

D:\STUDY\Internships & Projects\Internship-Akash-Technolabs\Day-5_OOP_based_tasks>python task-2.py
Area of circle with radius 3 =28.27

D:\STUDY\Internships & Projects\Internship-Akash-Technolabs\Day-5_OOP_based_tasks>python task-3.py
enter p:12
enter r:3
enter n:6
for p=12,r=3.0,n=6 simple interest = 2.16

D:\STUDY\Internships & Projects\Internship-Akash-Technolabs\Day-5_OOP_based_tasks>python task-4.py
enter any number:65
square of value 65 is 4225

D:\STUDY\Internships & Projects\Internship-Akash-Technolabs\Day-5_OOP_based_tasks>python task-5.py
-------Employee class display()-------
name :  ABCDEFG
designation :  HR Manager
-------Subclass display()---------
name :  ABCDEFG
designation :  HR Manager
salary :  10000

D:\STUDY\Internships & Projects\Internship-Akash-Technolabs\Day-5_OOP_based_tasks>python task-6.py
enter length:54
enter width:66
Area of rectangle with length=54 and width =66 is 3564
```

```
D:\STUDY\Internships & Projects\Internship-Akash-Technolabs\Day-5_OOP_based_tasks>python task-7.py
enter length:1
Area of square with length = 1 is 1

D:\STUDY\Internships & Projects\Internship-Akash-Technolabs\Day-5_OOP_based_tasks>python task-8.py
----Publisher display()----
Name :  John Carter
----Book display()----
Name :  John Carter
Pages: 200
----Tape display()----
Name :  John Carter
Pages: 200
time :3 hrs

D:\STUDY\Internships & Projects\Internship-Akash-Technolabs\Day-5_OOP_based_tasks>python task-9.py
Scheme id       :  1
Scheme name     :  ABC
Outgoing rate   :  20.4
Message Charge  :  10000
Customer id :  10
Customer name :  PQR
Customer mobile :  1234569878

D:\STUDY\Internships & Projects\Internship-Akash-Technolabs\Day-5_OOP_based_tasks>python task-10.py
enter a: 23
enter b: 21
23 + 21 = 44
23 - 21 = 2
23 * 21 = 483
```