

PYTHON

Assignment

1. Create a class called Person with attributes name and age. Define a method to display the person's details. Instantiate an object and print the details.
2. Write a class Car with attributes make, model, and year. Use a constructor to initialize these attributes when creating an object.
3. Create a class BankAccount with attributes account_holder and balance. Include an instance method deposit() to add money to the balance. Create an object and perform a deposit operation.
4. Define a class Student with instance variables name and grade. Create an instance method change_grade() to modify the grade value for the student object.
5. Create a class Book with attributes title and author. Write a constructor to initialize these attributes. Create two objects of Book and print their details.
6. Define a class Laptop with attributes brand and price. Create three objects for different laptop brands and display their prices using an instance method.
7. Create a class Employee with attributes name and salary. Assign an object to two different reference variables and demonstrate that changes through one reference reflect in the other.
8. Write a class Rectangle with attributes length and width. Include methods to calculate the area and perimeter. Instantiate an object and calculate the area and perimeter.

9. Create a class Phone with attributes brand and battery_life. Write a method use_phone() that reduces the battery life by 10%. Create an object and use this method to show changes in battery_life.
10. Define a class House with an attribute rooms. Create multiple objects of the House class and demonstrate the object references by printing the memory addresses of each object.
11. Write a class Employee with attributes name and salary, where salary has a default value. Create objects with and without the salary value and print their attributes.
12. Create a class Circle with attributes radius. Write an instance method calculate_area() that returns the area of the circle. Create an object and call the method to get the result.
13. Define a class Dog with attributes name and energy_level. Write methods to increase and decrease the energy_level. Create an object and manipulate the energy level using the methods.
14. Create two classes Person and Job. The Person class has a name and the Job class has a job_title. Write a method that takes a Person object and a Job object and assigns the job title to the person.
15. Write a class Product with attributes name and price. In the constructor, validate that the price is a positive number. Raise a ValueError if the price is negative. Create objects with valid and invalid prices.