OOPs Concepts (Hands-on 2)

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Problem Statement:
You work in XYZ Corporation as a Data Analyst. Your corporation has told you to work with the inheritance of the classes.

Tasks to be performed:

1. Create a class named parent_Class and inside the class, initialize a global variable num as 10.

    a. Create another class named child_Class and this class should be inherited from the parent class.

    b. Now create an object for the child_Class and with the help of child_Class object, display the value of 'num'.

2. Create three classes named A, B, and C.

    a. Inside the A class, create a constructor. Inside the constructor, initialize 2 global variables- name and age.

    b. After initializing the global variables inside the constructor, now create a function named
    'details' and that function should return the 'name' variable.

    c. Inside the B class, create a constructor. Inside the constructor, initialize 2 global variables-
    name and id.

    d. After initializing the global variables inside the constructor, now create a function named 'details' and that function should return the 'name' variable.

    e. The C class should inherit from class A, and B. Inside the class C, create a constructor, and inside the constructor, call the constructor of class A.

    f. Now, create a method inside the class C, as get_details, and this function should return the value of a name.

    g. Atlast, create an object of class C, and with the help of the object, call the get_details().

3. Create a class named Employee, with a constructor '__init__' method that accepts name and salary as parameters and set properties named name and salary.

4. Define __str__ method in Employee class so that when someone tries to print the object the

string Name: employee_name, Salary: employee_salary is printed with the actual employee name and salary.

5. Create a program using classes and objects to implement the following:
    1. A singly linked list, and various CRUD operations on the same.
    2. A binary tree, and various CRUD operations on the same.
    3. A graph data structure, and various CRUD operations on the same.
    4. Implementation of Circular and Doubly linked lists.