

Write a Python program to implement the object-oriented concepts of multiple, Multilevel and Hierarchical Inheritances using your domain applications.

My domain name = Employee information system

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In [ ]: #Base class
class Employee:
    def __init__(self, emp_id, name):
        self.emp_id = emp_id
        self.name = name

    def display_info(self):
        print(f"Employee ID: {self.emp_id}")
        print(f"Name: {self.name}")

#Single inheritance
class Manager(Employee):
    def __init__(self, emp_id, name, department):
        super().__init__(emp_id, name)
        self.department = department

    def display_info(self):
        super().display_info()
        print(f"Department: {self.department}")

#Another single inheritance
#Hence, multiple inheritance
class Worker(Employee):
    def __init__(self, emp_id, name, shift):
        super().__init__(emp_id, name)
        self.shift = shift

    def display_info(self):
        super().display_info()
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        print(f"Shift: {self.shift}")

#Multilevel inheritance
class TechnicalLead(Manager):
    def __init__(self, emp_id, name, department, team_size):
        super().__init__(emp_id, name, department)
        self.team_size = team_size

    def display_info(self):
        super().display_info()
        print(f"Team Size: {self.team_size}")

#Another multilevel inheritance
#Hierarchical inheritance
class SalesManager(Manager):
    def __init__(self, emp_id, name, department, sales_target):
        super().__init__(emp_id, name, department)
        self.sales_target = sales_target

    def display_info(self):
        super().display_info()
        print(f"Sales Target: {self.sales_target}")


# Creating instances of the classes
employee1 = Employee(1001, "Sagar Gurung")
employee2 = Employee(1002, "Arjun Ajai")

manager1 = Manager(2001, "Amit Singh", "HR")
manager2 = Manager(2002, "Aman Sharma", "HR")

worker1 = Worker(3001, "Arpit Sirola", "Day Shift")
worker2 = Worker(3002, "Sourav Singh", "Day Shift")

tech_lead1 = TechnicalLead(4001, "Shivani Rana", "Engineering", 10)
tech_lead2 = TechnicalLead(4002, "Abhay Bisht", "Engineering", 10)

sales_manager1 = SalesManager(5001, "Anand Tiwari", "Sales", 1000000)
sales_manager2 = SalesManager(5002, "Yuvraj Sunawane", "Sales", 1000000)

# Displaying employee information
employee1.display_info()
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employee2.display_info()  
print()  
  
manager1.display_info()  
manager2.display_info()  
print()  
  
worker1.display_info()  
worker2.display_info()  
print()  
  
tech_lead1.display_info()  
tech_lead2.display_info()  
print()  
  
sales_manager1.display_info()  
sales_manager2.display_info()  
print()
```

Employee ID: 1001
Name: Sagar Gurung
Employee ID: 1002
Name: Arjun Ajai

Employee ID: 2001
Name: Amit Singh
Department: HR
Employee ID: 2002
Name: Aman Sharma
Department: HR

Employee ID: 3001
Name: Arpit Sirola
Shift: Day Shift
Employee ID: 3002
Name: Sourav Singh
Shift: Day Shift

Employee ID: 4001
Name: Shivani Rana
Department: Engineering
Team Size: 10
Employee ID: 4002
Name: Abhay Bisht
Department: Engineering
Team Size: 10

Employee ID: 5001
Name: Anand Tiwari
Department: Sales
Sales Target: 1000000
Employee ID: 5002
Name: Yuvraj Sunawane
Department: Sales
Sales Target: 1000000