پاسخ سوال برنامه‌نویسی

دوره استادی پایتون درسمن

پایتون پیشرفته

پاسخ تمرین شماره ۱:

```python
### class for company
# =======================================================================================
class Company:
    def __init__(self, company_Name, company_Employees,company_Revenue):
        self.company_Name = company_Name
        self.company_Employees = company_Employees
        self.company_Revenue = company_Revenue

    ###productivity calculation
    def productivity(self):
        return f"Comapny Productivity:{self.company_Revenue/self.company_Employees}"

    def __str__(self):
        return f"Company Name:{self.company_Name}\nNumber of Employees:{self.company_Employees}
        \nCompany Revenue:{self.company_Revenue}"
# =======================================================================================
#-------------------------------------- main program --------------------------------------
print()
c1 = Company("XYZ",200,100000000)
print(c1)
print(c1.productivity())
print()
# =======================================================================================
#-------------------------------------- output --------------------------------------
```

```
Company Name:XYZ
Number of Employees:200
Company Revenue:100000000
Comapny Productivity:500000.0
```

پاسخ تمرین شماره ۲:

```python
### class for company
# ====================================================================================
#----------------------------------- classes and subclasses -----------------------------
## parent class
class Person:
    def __init__(self, name, family):
        self.name = name
        self.family = family

    def _show_Information(self):
        return f"{self.name}\t{self.family}"
# ------------------------------------------------------------------------
## child class
class Manager(Person):
    manager_Count = 0

    def __init__(self, name, family,manager_Code,salary):
        super().__init__(name,family)
        self.manager_Code = manager_Code
        self.__salary = salary          # private member
        Manager.manager_Count+=1

    def get_Mnager_Salary(self):
        return self.__salary

    def set_Manager_Salary(self,new_Salary):
        self.__salary = new_Salary

    def show_Manager_Information(self):
        return f"Code:{self.manager_Code}\tFullName:{self._show_Information()}\t\tSalary:{self.__salary}"
# ------------------------------------------------------------------------
## child class
class Employee(Person):
    employee_Count = 0

    def __init__(self, name, family, employee_Code,rank):
        super().__init__(name,family)
        self.employee_Code = employee_Code
        self.__rank = rank              # private member
        Employee.employee_Count+=1

    def get_Rank(self):
        return self.__rank

    def set_Rank(self,new_Rank):
        self.__rank = new_Rank

    def show_Employee_Information(self):
        return f"{self.employee_Code}\t{self._show_Information()}\t{self.__rank}"
# ------------------------------------------------------------------------
## child class
class Intern(Person):
    intern_Count = 0

    def __init__(self, name, family,intern_Code):
        super().__init__(name,family)
        self.intern_Code = intern_Code
        self.internship_Time = 12
        Intern.intern_Count+=1

    def show_Intern_Information(self):
        return f"FullName:{self._show_Information()}\t Code:{self.intern_Code}"
# ====================================================================================
#----------------------------------- main program -----------------------------------
manager_List = []
```

```
67    manager1 = Manager("Reza","Ahmadi",1,20000000)
68    manager2 = Manager("Sara","Biniaz",2,25000000)
69    manager3 = Manager("Ali","Ganji",3,18000000)
70    manager_List.append(manager1)
71    manager_List.append(manager2)
72    manager_List.append(manager3)
73
74    for manager in manager_List:
75        print(manager.show_Manager_Information())
76
77    print("Number of Managers:",Manager.manager_Count)
78
79    manager1.set_Manager_Salary(22000000)
80    print(manager1.get_Mnager_Salary())
81    print("******************************")
82    ################################################
83    employee_List = []
84
85    employee1 = Employee("Maryam","Rezaee",1,"A")
86    employee2 = Employee("Milad","Karami",3,"A")
87    employee3 = Employee("Ahmad","Shahed",5,"C")
88    employee4 = Employee("Zahra","Asadi",2,"B")
89    employee_List.append(employee1)
90    employee_List.append(employee2)
91    employee_List.append(employee3)
92    employee_List.append(employee4)
93
94    print("Code","\t","FullName","\t","Rank")
95
96    for employee in employee_List:
97        print(employee.show_Employee_Information())
98
99    print("Number of Employees:",Employee.employee_Count)
100
101   employee3.set_Rank("D")
102   print(employee3.get_Rank())
103   print("******************************")
104   ################################################
105   intern_List = []
106
107   intern1 = Intern("Sima","Rahmani",112)
108   intern2 = Intern("Mohammad","Majd",100)
109   intern_List.append(intern1)
110   intern_List.append(intern2)
111
112   for intern in intern_List:
113       print(intern.show_Intern_Information())
114
115   print("Number of Interns:",Intern.intern_Count)
116   # ================================================================
117   #------------------------------------ output ------------------------------------
```

```
Code:1  FullName:Reza      Ahmadi        Salary:20000000
Code:2  FullName:Sara      Biniaz        Salary:25000000
Code:3  FullName:Ali       Ganji         Salary:18000000
Number of Managers: 3
22000000
******************************
Code      FullName        Rank
1         Maryam  Rezaee  A
3         Milad   Karami  A
5         Ahmad   Shahed  C
2         Zahra   Asadi   B
Number of Employees: 4
D
******************************
FullName:Sima    Rahmani  Code:112
FullName:Mohammad        Majd    Code:100
Number of Interns: 2
```