

Assignment-3

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Github : https://github.com/Muralikrishna9550/Assignment_3.git

Video:

<https://drive.google.com/file/d/1UGeXGA2NghUluMmpWIVFCsaYlUp3uXob/view?usp=sharing>

1) Create a class Employee and then do the following

- Create a data member to count the number of Employees
- Create a constructor to initialize name, family, salary, department
- Create a function to average salary
- Create a Fulltime Employee class and it should inherit the properties of Employee class
- Create the instances of Fulltime Employee class and Employee class and call their member functions

```

class Employee:
    numberOfEmployees = 0

    def __init__(self, name, family, salary, department):
        self.name = name
        self.family = family
        self.salary = salary
        self.department = department
        Employee.numberOfEmployees+=1

    def averagesalary(employee):
        total = sum(e.salary for e in employee)
        average = total / len(employee)
        return average

class FulltimeEmployee(Employee):
    def __init__(self, name, family, salary, department):
        Employee.__init__(self,name, family, salary, department)

print("Employee 1: ")
employee1 = Employee(input("Enter name: "),input("Family Members: "),int(input("Employee Salary: ")),input("Employee Department: "))
print("Employee 2: ")
employee2 = Employee(input("Enter name: "),input("Family Members: "),int(input("Employee Salary: ")),input("Employee Department: "))
print("Full Time Employee 1: ")
employee3 = FulltimeEmployee(input("Enter name: "),input("Family Members: "),int(input("Employee Salary: ")),input("Employee Department: "))
print("")
print("Number of employees: ",Employee.numberOfEmployees)
listofEmployees = [employee1, employee2, employee3]
avgsalary = averagesalary(listofEmployees)
print("Avg salary is :", avgsalary)

```

Output:

```

Employee 1:
Enter name: Murali
Family Members: 4
Employee Salary: 45000
Employee Department: Technical
Employee 2:
Enter name: Krishna
Family Members: 4
Employee Salary: 50000
Employee Department: Non-Technical
Full Time Employee 1:
Enter name: Pranay
Family Members: 5
Employee Salary: 100000
Employee Department: Software

Number of employees: 3
Avg salary is : 65000.0

```

2) . Numpy

Using NumPy create random vector of size 20 having only float in the range 1-20. Then reshape the array to 4 by 5 Then replace the max in each row by 0 (axis=1) (you can NOT implement it via for loop)

```

import numpy

random_vector = numpy.random.uniform(1, 20, 20)
print(random_vector)
print("")
print("")
reshaped_array = random_vector.reshape(4, 5)
print("")
print("")
print(reshaped_array)
reshaped_array[numpy.arange(4), numpy.argmax(reshaped_array, axis=1)] = 0
print("")
print("")
print(reshaped_array)

```

Output:

```

[16.41117175  8.26009752 11.96067288 18.18757295  3.57834967  1.62513528
 6.35828943  1.51358888 14.12630632  3.88060967 17.47795237 18.33521254
 5.37282516  1.47450245  6.05347153 10.09096409  9.20144949 12.46663379
 8.04874045 16.82444727]

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```

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```

[[16.41117175  8.26009752 11.96067288  0.          3.57834967]
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```