Assignment - 3

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1. 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:
  def __init__(self):  #constructor for name,family,salary and Department.
        self.name ="Sreeja"
        self.family =4
        self.salary=9765
        self.department="CSE"
  def __init__(self,name,family,salary,department):
        self.name =name
        self.family =family
        self.salary=salaryA
        self.department=department

  def count_emp(self,emp1,fullemp1):
        print("The total Number of Employees(employee+Fulltime employee):",len(emp1+fullemp1)) #counti

  def avg_salary(self,emp1,fullemp1):  #function for calculating the average salaryof all employees.
       su=0
       for i in emp1:
           su=su+i.salary
       for i in fullemp1:
            su=su+i.salary
       print("the average salary of the all the Employees(employee+Fulltime employee):",su/2)
class Fulltime_Employee(Employee):
    pass
n=int(input("enter number of employees"))
pe=[]
for i in range(0,n):  #using for() loop,take the input dynamically.
    na=input("enter name")
```

```
n=int(input("enter number of employees"))
pe=[]
for i in range(0,n):  #using for() loop,take the input dynamically.
    na=input("enter name")
    f=int(input("enter how many family members"))
    s=int(input("enter salary"))
    d=input("enter department")
    obj=Employee(na,f,s,d)
    pe.append(obj)
full=int(input("enter Full time employees"))
fe=[]
for i in range(0,full):
    na=input("enter name")
    f=int(input("enter how many family members"))
    s=int(input("enter salary"))
    d=input("enter department")
    obj=Fulltime_Employee(na,f,s,d)
    fe.append(obj)

result=Fulltime_Employee(na,f,s,d)
result.count_emp(pe,fe) #function call
result.avg_salary(pe,fe) #function call
```

Output:

```
enter number of employees1
enter namesreeja
enter how many family members4
enter salary4000
enter departmentcse
enter Full time employees1
enter namelakshmi
enter how many family members1
enter salary6000
enter departmentece
The total Number of Employees(employee+Fulltime employee): 2
the average salary of the all the Employees(employee+Fulltime employee): 5000.0
```

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)

Source code:

```
import numpy as np #import numpy
x = np.arange(1,21,dtype=float) #vector of size 1-20
print("Vector :",x)
x=x.reshape(4,5) #use reshape() to reshape the array into 4*5
print("Then reshape the array to 4 by 5:",x)
def replace(x):
    a=x
    a[:,np.argmax(x, axis=1)] = 0
    return a
result= replace(x)
print("replace the max in each row by 0 (axis=1):",result)
```

Output:

```
Vector : [ 1.  2.  3.  4.  5.  6.  7.  8.  9. 10. 11. 12. 13. 14. 15. 16. 17. 18.
 19. 20.]
Then reshape the array to 4 by 5: [[ 1.  2.  3.  4.  5.]
 [ 6.  7.  8.  9. 10.]
 [11. 12. 13. 14. 15.]
 [16. 17. 18. 19. 20.]]
replace the max in each row by 0 (axis=1): [[ 1.  2.  3.  4.  0.]
 [ 6.  7.  8.  9.  0.]
 [11. 12. 13. 14.  0.]
 [16. 17. 18. 19.  0.]]
```