# 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.

# Creating a class called 'Employee'

class Employee:

  employee\_count = 0

# Declaring and initializing the constructor

  def \_\_init\_\_(self, name, family, salary, department):

        self.name = name

        self.family = family

        self.salary = salary

        self.department = department

        Employee.employee\_count = Employee.employee\_count + 1

# Creating a function called avg\_salary

  def avg\_salary(self, emps):

      sum\_salary = 0

      for i in emps:

            sum\_salary= sum\_salary+ i.salary

# Printing the output

      print(sum\_salary/len(emps))

# Creating a class called Fulltime\_Employee

class Fulltime\_Employee(Employee):

      def \_\_init\_\_(self, name, family, salary, department):

         Employee.\_\_init\_\_(self, name, family, salary, department)

list = []

list.append(Employee('Brad', 'Pitt', 30000, 'Supply Chain Management'))

list.append(Employee('Jhonny', 'deep', 40000, 'Human Resources'))

list.append(Fulltime\_Employee('Will', 'Smith', 50000, 'Sales'))

list.append(Fulltime\_Employee('Leonardo', 'Dicaprio', 60000, 'Research and Development'))

list[0].avg\_salary(list)

list[2].avg\_salary(list)

# Printing output of an employee count

print(Employee.employee\_count)

A white rectangular object with a black border

Description automatically generated

# 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 as np

# Creating a  random vector that has a  size 20 with floats between 1 and 20

vec = np.random.uniform(1, 20, 20)

# Reshaping the vector to 4 by 5

mat = vec.reshape(4, 5)

# Replace the maximum number in each row by 0

mat[np.arange(4), mat.argmax(axis=1)] = 0

# Printing the output

print(mat)

A close up of numbers

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