Spring 2024: CS5720

NEURAL NETWORK AND DEEP LEARNING

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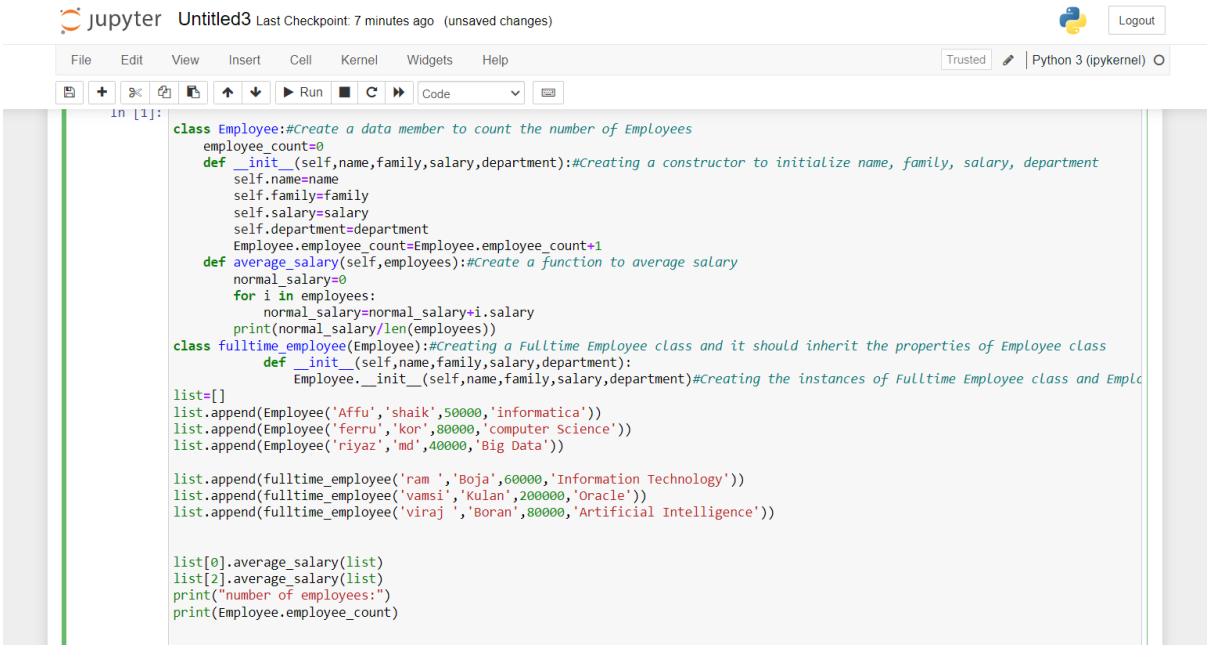
Git Hub Link: https://github.com/Afrozmohammad19/Assignment3

Video Link:https://drive.google.com/file/d/1c8ghJHR9roI4lEMgM0ZKOt6ngNqRYIAD/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.



Output:

```
85000.0
85000.0
number of employees:
6
```

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)

```python
import numpy as np
# Create random vector of size 20 with floats between 1 and 20
vec = np.random.uniform(6, 4, 20)
# Reshape the vector to 4 by 5
mat = vec.reshape(4, 5)
# Replacing the max in each row by 0
mat[np.arange(4), mat.argmax(axis=1)] = 0
# Print the output
print(mat)
```

Output:

```
[[4.06387688 0.         4.73714352 5.09483815 5.10260552]
 [0.         4.54910646 5.48952827 4.10878087 4.10095593]
 [4.94031129 4.29577979 4.15623534 0.         5.22557876]
 [0.         5.68966272 5.65071936 5.10694858 5.27398924]]
```