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Python-ICP3

In class programming:

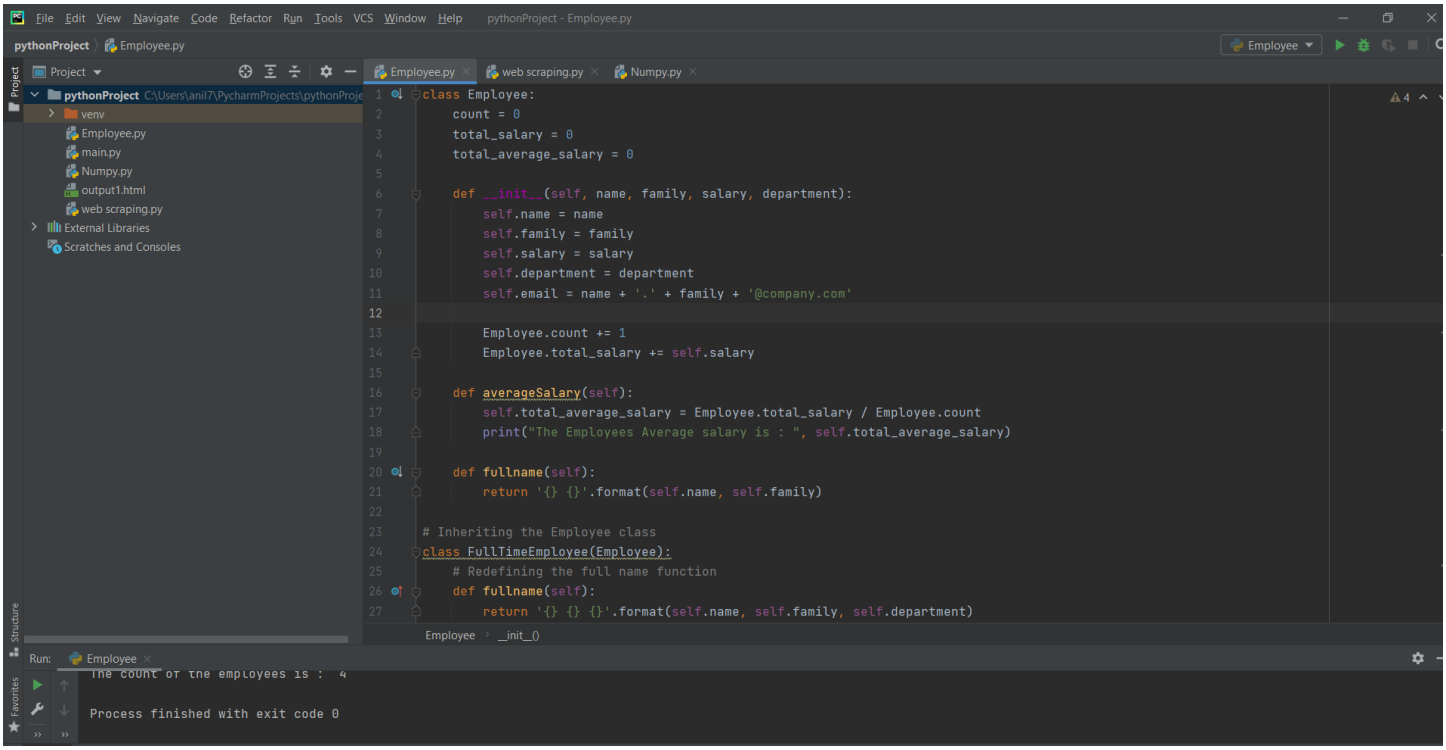
1. Create a class Employee and then do the following

- **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.**

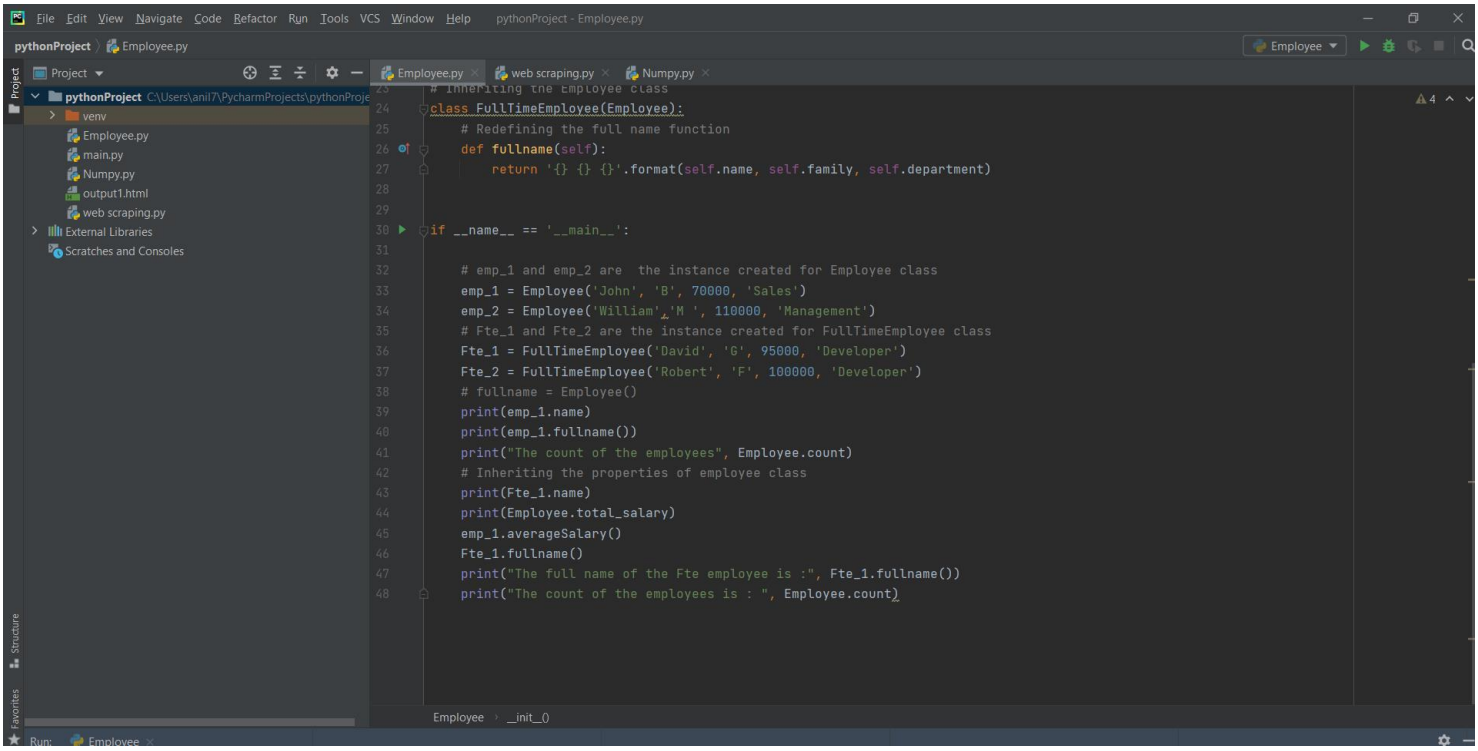
Program Execution: Here, I have taken Employee class and count, total salary and total average salary. Later then I initialize the name family salary and department. Where employee count +=1. Every time I take the new employee It increments by 1. And then average salary, where it depends on no of employees and total salary of all the employees. Later I have given the values to all the objects which I initialized.

Program code is in the below 2 Screenshots.

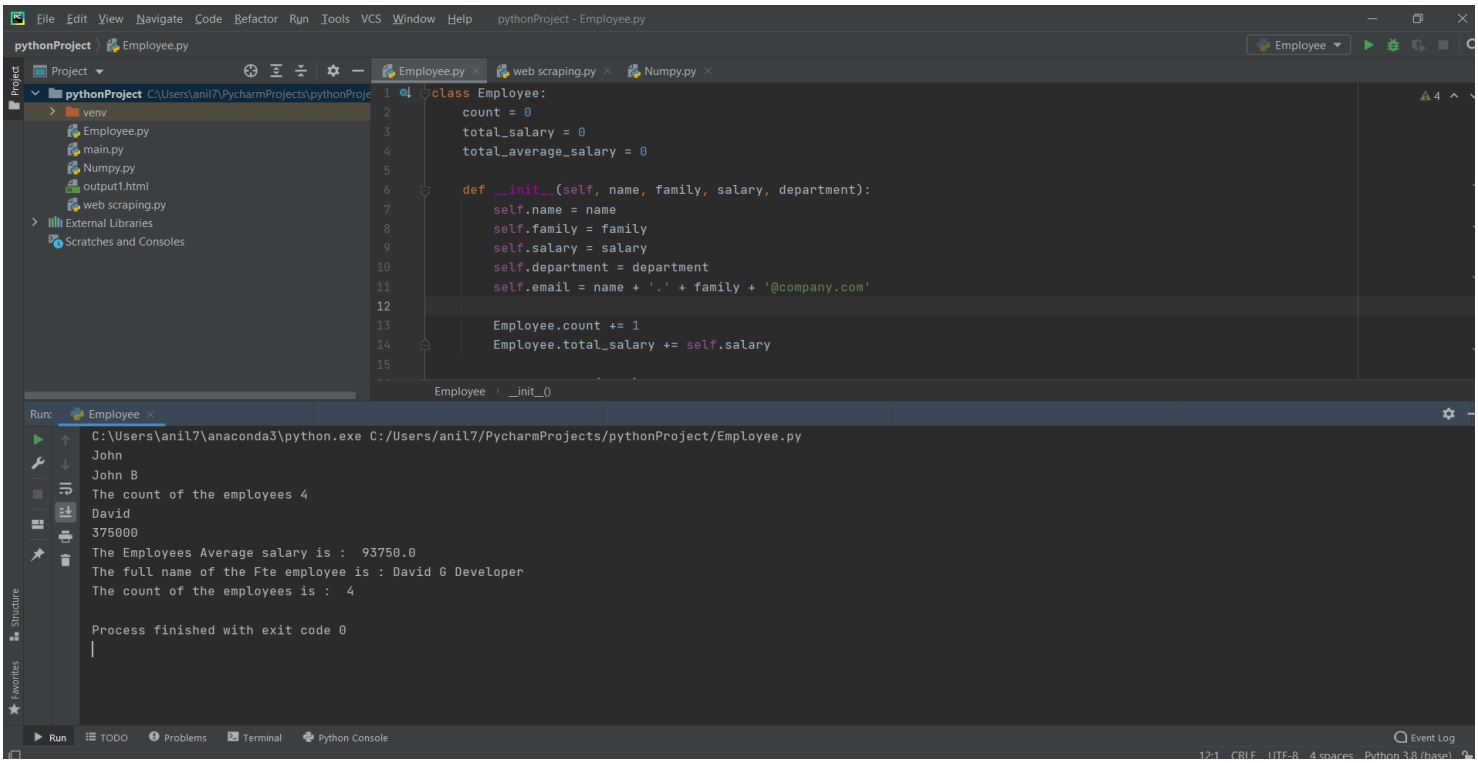
Screenshot: 1



Screenshot: 2



Screenshot: 3. Output



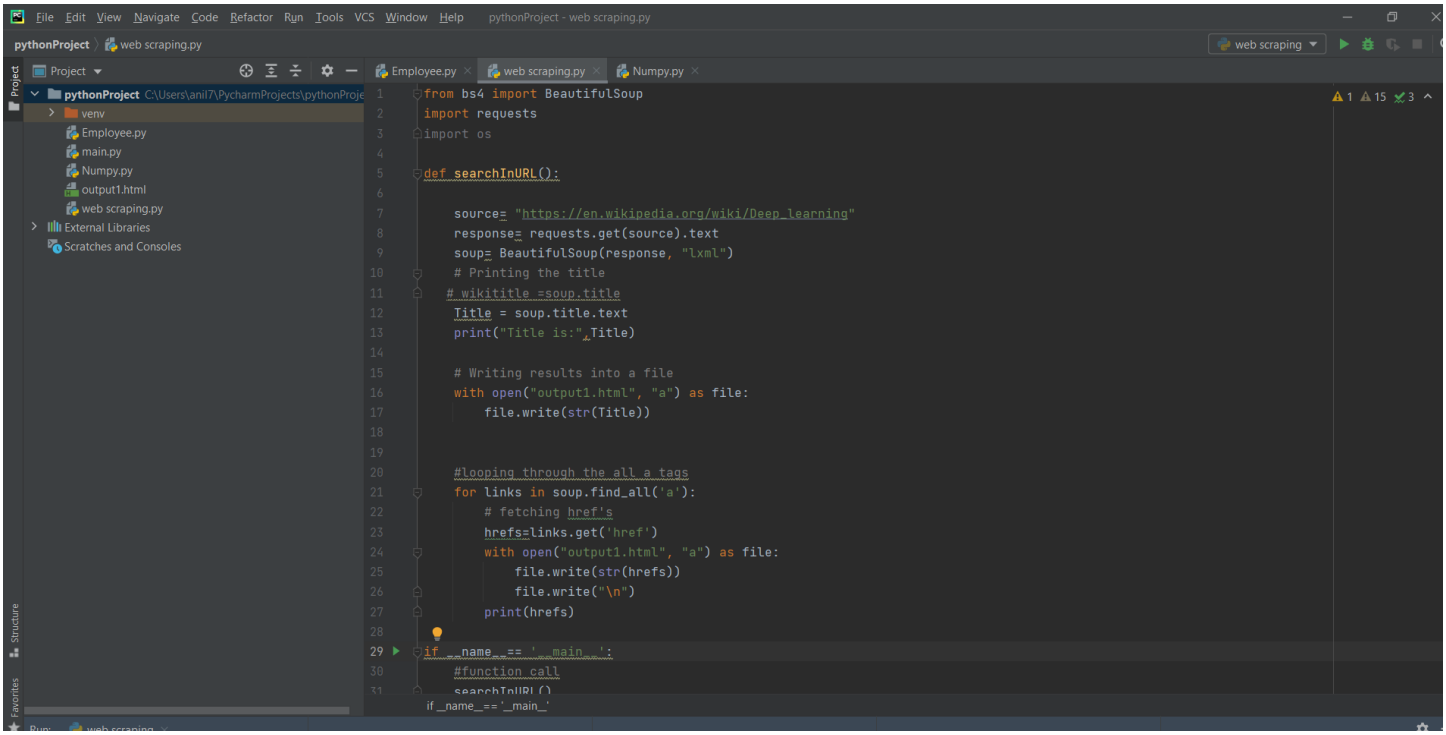
2. Web scraping

Write a simple program that parse a Wiki page mentioned below and follow the instructions:
https://en.wikipedia.org/wiki/Deep_learning

- **Print out the title of the page**
- **Find all the links in the page (‘a’ tag)**
- **Iterate over each tag(above) then return the link using attribute "href" using get**
- **Save all the links in the file**

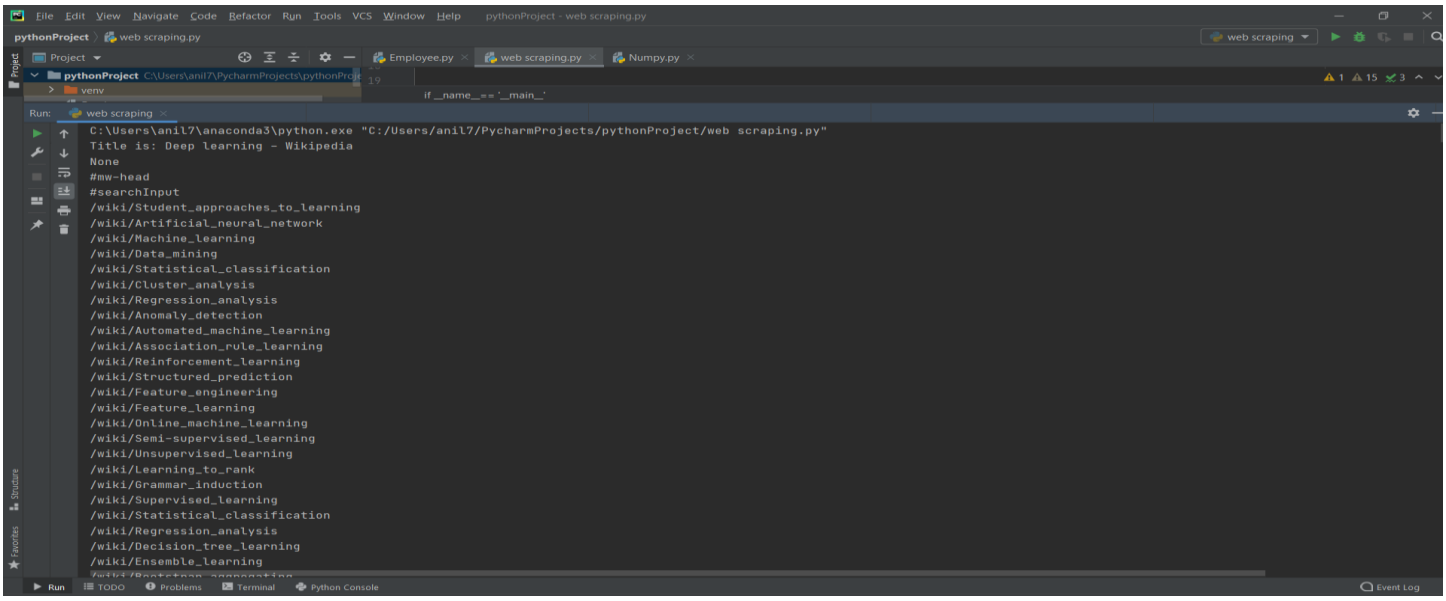
Here I the screenshot which I have written the code. Where it displays the title of the page and all the links which are in the page.

Screenshot: 4

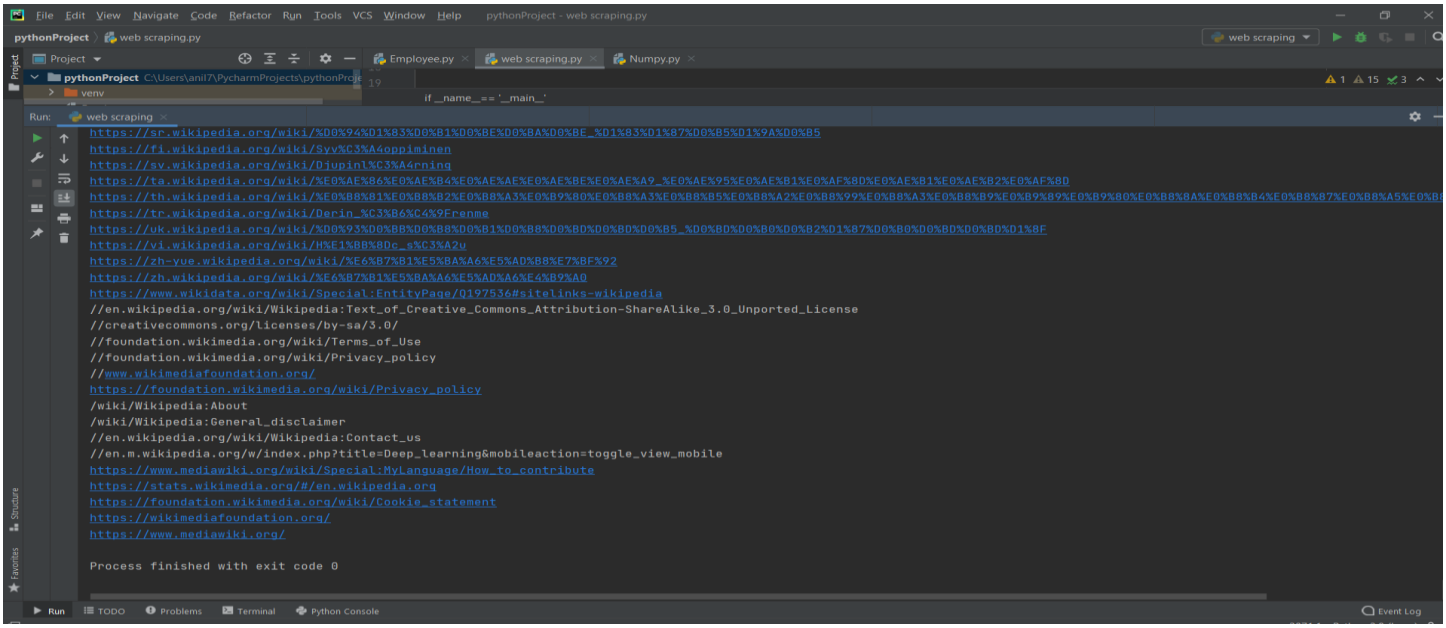


Here are the output screenshots of the above program which displays the title and links which are in the page.

Screenshot: 5.



Screenshot: 6



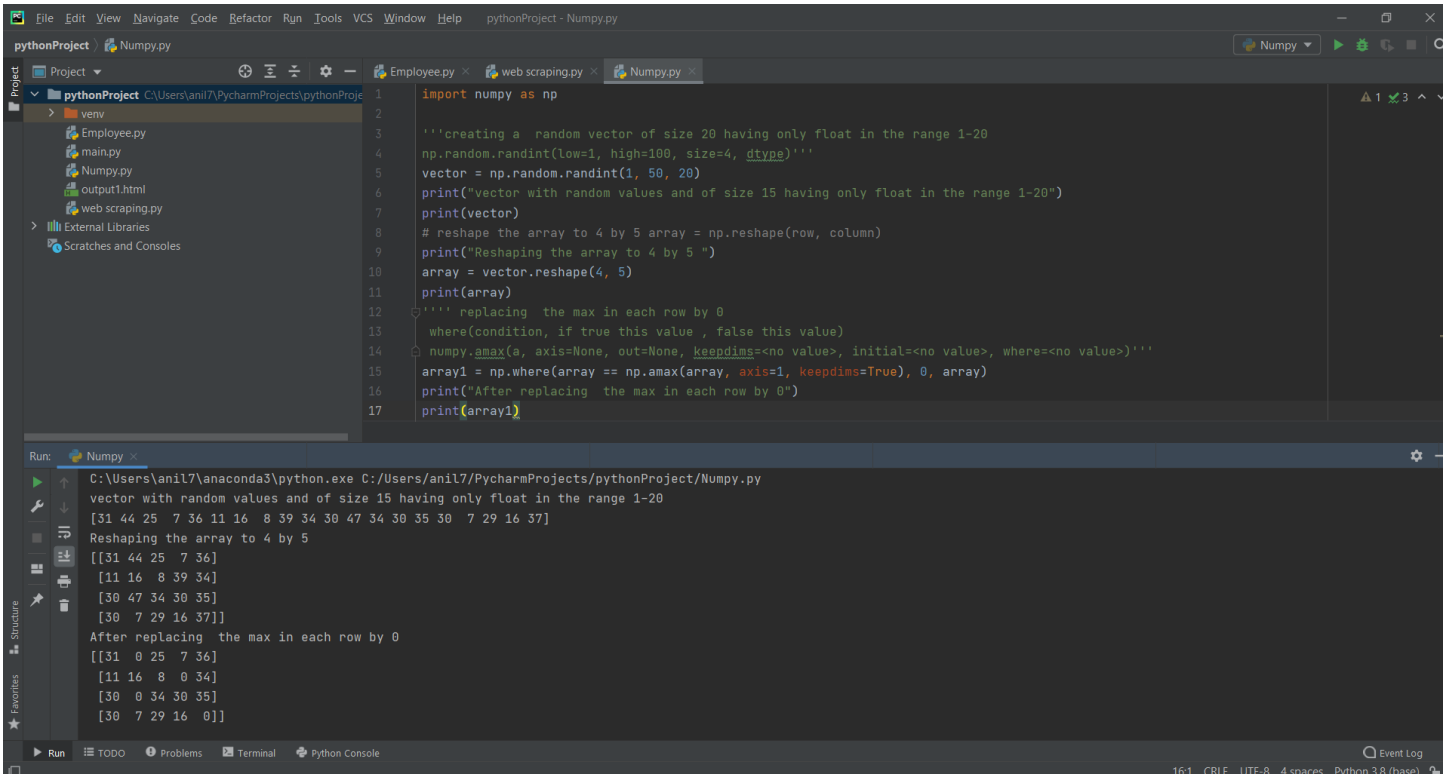
3. Numpy

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)

Here range1-20, reshaping the array size 4 by 5. And then replacing the maximum value with 0. The matrix gets changed.

The below screenshot is the program code and output.

Screenshot: 7


File Edit View Navigate Code Refactor Run Tools VCS Window Help pythonProject - Numpy.py
pythonProject Numpy.py
Numpy
Project
pythonProject C:\Users\anil7\PycharmProjects\pythonProje
venv
Employee.py
main.py
Numpy.py
output1.html
web scraping.py
External Libraries
Scratches and Consoles
Employee.py
web scraping.py
Numpy.py
1 import numpy as np
2
3 '''creating a random vector of size 20 having only float in the range 1-20
4 np.random.randint(low=1, high=100, size=4, dtype)'''
5 vector = np.random.randint(1, 50, 20)
6 print("vector with random values and of size 15 having only float in the range 1-20")
7 print(vector)
8 # reshape the array to 4 by 5 array = np.reshape(row, column)
9 print("Reshaping the array to 4 by 5 ")
10 array = vector.reshape(4, 5)
11 print(array)
12 '''' replacing the max in each row by 0
13 where(condition, if true this value , false this value)
14 numpy.amax(a, axis=None, out=None, keepdims=<no value>, initial=<no value>, where=<no value>)'''
15 array1 = np.where(array == np.amax(array, axis=1, keepdims=True), 0, array)
16 print("After replacing the max in each row by 0")
17 print(array1)
Run: Numpy
C:\Users\anil7\anaconda3\python.exe C:/Users/anil7/PycharmProjects/pythonProject/Numpy.py
vector with random values and of size 15 having only float in the range 1-20
[31 44 25 7 36 11 16 8 39 34 30 47 34 30 35 30 7 29 16 37]
Reshaping the array to 4 by 5
[[31 44 25 7 36]
[11 16 8 39 34]
[30 47 34 30 35]
[30 7 29 16 37]]
After replacing the max in each row by 0
[[31 0 25 7 36]
[11 16 8 0 34]
[30 0 34 30 35]
[30 7 29 16 0]]
Run TODO Problems Terminal Python Console
Event Log
16:1 CRLF UTF-8 4 spaces Python 3.8 (base)