PYTHON PROGRAMMING

LAB-19 ANSWERS

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1. How to find the mean of every NumPy array in the given list?

Input: list = [np.array([3, 2, 8, 9]), np.array([4, 12, 34, 25, 78]), np.array([23, 12, 67])]

Code:

```
import numpy as np #importing numpy as np.

list = [np.array([3, 2, 8, 9]), np.array([4, 12, 34, 25, 78]), np.array([23, 12, 67])] # Input list of numpy arrays.

means = list(map(np.mean,list)) # Finding mean using map function.

print(means) #printing final result as means.
```

Output:

[5.5, 30.6, 34.0]

2. Compute the median of the flattened NumPy array

Input:

x_odd = np. array([1, 2, 3, 4, 5, 6, 7])

Code:

```
import numpy as np #importing numpy as np.

odd_no = np.array([1, 2, 3, 4, 5, 6, 7])# Input the array.
```

```
median = np.median(odd_no) # Computing the median of the flattened array.

print(median) #printing the final result as median.
```

Output:

4.0

3. Compute the standard deviation of the NumPy array

Input: arr = [20, 2, 7, 1, 34]

Code:

```
import numpy as np #importing numpy as np.

array = np.array([20, 2, 7, 1, 34]) # Input array.

stdv = np.std(array)# Computing the standard deviation using NumPy function.

print(stdv) #printing the final result as stdv.
```

Output:

12.5761679378099

4. Suppose you have a CSV file named 'house_prices.csv' with price information, and you want to perform the following operations:

- 1. Read the data from the CSV file into a NumPy array.
- 2.Calculate the average of house prices.
- 3.Identify house price above the average
- . ● 4.Save the list of high prices to a new CSV file.

1. Read the data from the CSV file into a NumPy array.

Code:

```
import numpy as np #import numpy as np
file = 'house_prices.csv.csv' # Giving the csv file name.
result = np.genfromtxt(file, delimiter=',')
print(result) # Printing the final result as result.
```

Output:

```
[[       nan        nan]
 [0.00000e+00 6.00000e+03]
 [1.00000e+00 1.37990e+04]
 ...
 [1.87528e+05 4.34300e+03]
 [1.87529e+05 4.23100e+03]
 [1.87530e+05 6.16200e+03]]
```

2.Calculate the average of house prices.

Code:

```
import numpy as np #importing numpy as np.
file = 'house_prices.csv.csv' # Giving the csv file name.
data = np.genfromtxt(file, delimiter=',') # Read the data from the CSV file into a NumPy array.
average_cost = np.mean(data[10])# Calculate the average of house prices.
print("The average house cost is:", average_cost) # Print the average cost.
```

Output:

```
The average house cost is: 6092.0
```

3.Identify house price above the average.

Code:

```
import numpy as np #importing numpy as np.
file = 'house_prices.csv.csv' # Giving the csv file name..
data = np.genfromtxt(file, delimiter=',')# Read the data from the CSV file into a NumPy array.
average_cost = np.mean(data[10]) # Calculate the average of house prices.
house_prices_above_average = data[10][data[10] > average_cost]# Identify house price above the average
print("House prices above the average:") # Print the house prices above the average.
print(house_prices_above_average)# Print the house prices above the average.
```

Output:

House prices above the average:
[12174.]

4.Save the list of high prices to a new CSV file.

Code:

```
import csv # importing csv.

high_prices = [100, 150, 200, 180, 250] # Sample list of high prices

file_name = "House prices .csv" # Specify the file name

with open(file_name, mode='w', newline='') as file:# Write high prices to CSV file.
    writer = csv.writer(file)
    writer.writerow(["High Prices"])
    for price in high_prices:
        writer.writerow([price])

print("High prices saved to", file_name) #printing  the new saved named file.
```

Output:

High prices saved to House prices .csv