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