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**ROLL NO-818**

**PRN NO-202201040164**

**BATCH-H1**

**EDS ASSIGNMENT-3**

**To perform all numpy operations**

**SOLUTION:-**

**Open the CSV file convert the list into numpy and performing operations on it**

|  |
| --- |
| import numpy as np n1=np.loadtxt("/content/testmarks1.csv",delimiter=',',dtype=str,skiprow s=1) print(n1) sal=[] exp=[] for i in n1:  sal.append(float(i[2])) exp.append(float(i[3])) print(sal) print(exp)    #converting list to numpyarray arr\_sal=np.array(sal) arr\_exp=np.array(exp)    #displaying the array print("A1:",arr\_sal) print("A2:",arr\_exp) |

**OUTPUT:-**

|  |  |
| --- | --- |
|  | |
| [['801' '43.05' '27.79' '28.7' '27.79'] |  |

['802' '43.47' '28.52' '28.98' '27.89']

['803' '42.24' '28.16' '28.16' '25.63']

['804' '39.24' '26.16' '26.16' '26.16'] ['805' '40.9' '26.03' '27.27' '25.65']

['806' '39.47' '26.31' '26.31' '25.21']

['807' '41.68' '25.63' '27.79' '25.46']

['808' '42.19' '27.61' '28.13' '26.21']

['809' '44.75' '28.35' '29.83' '28.21']

['810' '46.95' '28.88' '31.3' '28.53']]

[27.79, 28.52, 28.16, 26.16, 26.03, 26.31, 25.63, 27.61, 28.35, 28.88]

[28.7, 28.98, 28.16, 26.16, 27.27, 26.31, 27.79, 28.13, 29.83, 31.3]

A1: [27.79 28.52 28.16 26.16 26.03 26.31 25.63 27.61 28.35 28.88] A2: [28.7 28.98 28.16 26.16 27.27 26.31 27.79 28.13 29.83 31.3 ]

# #NUMPY OPERATIONS

|  |
| --- |
| #numpy operations    #data sorting import numpy as np  arr=np.array((arr\_sal)) arr1=np.array((arr\_exp)) print(np.sort(arr)) print(np.sort(exp)) |

# OUTPUT

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| arr=np.array((arr\_sal)) arr1=np.array((arr\_exp))  print(np.sort(arr)) print(np.sort(exp)) | | | |  |
|  |
|  |
|  |
|  |  |  |  |  |

[25.63 26.03 26.16 26.31 27.61 27.79 28.16 28.35 28.52 28.88]

[26.16 26.31 27.27 27.79 28.13 28.16 28.7 28.98 29.83 31.3 ]

|  |
| --- |
| #Get third and fourth elements from the following array and add them.  import numpy as np  arr = np.array((arr\_sal))  print(arr[2] + arr[3]) |

# OUTPUT

54.32

#Getting the two positons where two arrays match a=np.array((arr\_sal)) b=np.array((arr\_exp)) print(np.where(a==b))

# OUTPUT

(array([2, 3, 5]),)

|  |  |
| --- | --- |
| #gives the position of odd numbers  import numpy as np  arr=np.array((arr\_sal)) x=np.where(arr%2==0) print(x) | |
| OUTPUT |  |

(array([], dtype=int64),)

|  |
| --- |
| #statistical operations array1=np.array((arr\_sal)) #Standard deviation print(np.std(array1))    #Minimum print(np.min(array1))    #summation print(np.sum(array1))  #median print(np.median(array1))  #mean print(np.mean(array1)) |

# OUTPUT

1.1324857614998962

25.63

273.44

27.7

27.344

|  |
| --- |
| #copying of array import numpy as np arr1=np.array((arr\_sal)) arr2=arr1.copy() print(arr1)    OUTPUT  [27.79 28.52 28.16 26.16 26.03 26.31 25.63 27.61 28.35 28.88] |

#Viewing of array import numpy as np import numpy as np arr1=np.array((arr\_exp)) arr2=arr1.view() print(arr1)

# OUTPUT

[28.7 28.98 28.16 26.16 27.27 26.31 27.79 28.13 29.83 31.3 ]

|  |
| --- |
| #numpy.hstack import numpy as np  arr1=np.array((arr\_sal)) arr2=np.array((arr\_exp))  arr3=np.hstack((arr1,arr2)) print(arr3) |

# OUTPUT

[27.79 28.52 28.16 26.16 26.03 26.31 25.63 27.61 28.35 28.88 28.7 28.98

28.16 26.16 27.27 26.31 27.79 28.13 29.83 31.3 ]

|  |  |
| --- | --- |
| #numpy.vstack import numpy as np  arr1=np.array((arr\_sal)) arr2=np.array((arr\_exp))  arr3=np.vstack((arr1,arr2)) print(arr3) | |
| OUTPUT |  |

[[27.79 28.52 28.16 26.16 26.03 26.31 25.63 27.61 28.35 28.88]

[28.7 28.98 28.16 26.16 27.27 26.31 27.79 28.13 29.83 31.3 ]]

|  |  |
| --- | --- |
| #columnstack import numpy as np arr1=np.array((arr\_sal)) arr2=np.array((arr\_exp))    arr3=np.column\_stack((arr1,arr2)) print(arr3) | |
| OUTPUT |  |

[[27.79 28.7 ]

[28.52 28.98]

[28.16 28.16]

[26.16 26.16]

[26.03 27.27]

[26.31 26.31]

[25.63 27.79]

[27.61 28.13]

[28.35 29.83]

[28.88 31.3 ]]

|  |  |
| --- | --- |
| #rowstack import numpy as np arr1=np.array((arr\_sal)) arr2=np.array((arr\_exp))  arr3=np.row\_stack((arr1,arr2)) print(arr3) | |
| OUTPUT |  |

[[27.79 28.52 28.16 26.16 26.03 26.31 25.63 27.61 28.35 28.88]

[28.7 28.98 28.16 26.16 27.27 26.31 27.79 28.13 29.83 31.3 ]]

|  |  |
| --- | --- |
| #reshape of arrays import numpy as np  arr = np.array((arr\_sal))  newarr = arr.reshape(5,2)  print(newarr) | |
| OUTPUT |  |

[[27.79 28.52]

[28.16 26.16]

[26.03 26.31]

[25.63 27.61]

[28.35 28.88]

]

|  |  |
| --- | --- |
| #spliting of arrays import numpy as np    arr = np.array((arr\_sal))  newarr = np.array\_split(arr, 3)    print(newarr) | |
| OUTPUT |  |

[array([27.79, 28.52, 28.16, 26.16]), array([26.03, 26.31, 25.63]), array([27.61, 28.35, 28.88])]