NAME-SUSHANT BANSODE

ROLLNO-302

PRNNO-202201090025

BATCH-C1

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])]
```