

Write a program to create a NumPy 1D-array with 5 elements and perform basic operations

```
import numpy as np
x=[1,2,3,4,5]
arr=np.array(x)
#1)-(a)
arr_sum=arr+2
print(arr_sum)
#1)-(b)
arr_multiply=arr*3
print(arr_multiply)
#1)-(c)
arr_div=arr/3
print(arr_div)

[3 4 5 6 7]
[ 3  6  9 12 15]
[0.33333333 0.66666667 1.          1.33333333 1.66666667]
```

Questions on Basic NumPy Array

```
arr=np.array([1,2,3,6,4,5])
#2)-(a)
arr_rev=arr[::-1]
print(arr_rev)
#2)-(b):1
x=np.array([1,2,3,4,5,1,2,1,1,1])
x = np.array([1,2,3,4,5,1,2,1,1,1])
most_frequent = np.bincount(x).argmax()
indices = np.where(x == most_frequent)[0]
print(most_frequent, indices)

[5 4 6 3 2 1]

#3)
arr = np.array([[10, 20, 30], [40, 50, 60], [70, 80, 90]])
# a) Accessing the element at the first row and second column
element_1_2 = arr[0][1]
print("Element at (1st row, 2nd column):", element_1_2)
# b) Accessing the element at the third row and first column
element_3_1 = arr[2][0]
print("Element at (3rd row, 1st column):", element_3_1)

Element at (1st row, 2nd column): 20
Element at (3rd row, 1st column): 70

#4)
Karan=np.linspace(10,100,25)
print(Karan)
```

```

print("\nDimensions:",Karan.shape)
print("\nTotal elements:",Karan.size)
print("\nData Type of each element:",Karan.dtype)
print("\nTotal Number of bytes consumed:",Karan.itemsize*Karan.size)
print("\nTranspose:\n",Karan.reshape(25))
Karan.T
print("\nYes,we can do the Transpose of this array using T attribute")

```

10.	13.75	17.5	21.25	25.	28.75	32.5	36.25	40.	43.75
47.5	51.25	55.	58.75	62.5	66.25	70.	73.75	77.5	81.25
85.	88.75	92.5	96.25	100.					

Dimensions: (25,)

Total elements: 25

Data Type of each element: float64

Total Number of bytes consumed: 200

Transpose:

10.	13.75	17.5	21.25	25.	28.75	32.5	36.25	40.	43.75
47.5	51.25	55.	58.75	62.5	66.25	70.	73.75	77.5	81.25
85.	88.75	92.5	96.25	100.					

Yes,we can do the Transpose of this array using T attribute

```

ucs420_Karan=np.array([[10,20,30,40],[50,60,70,80],[90,15,20,35]])
print("Mean:",np.mean(ucs420_Karan))
print("\nMedian:",np.median(ucs420_Karan))
print("\nMax:",np.max(ucs420_Karan))
print("\nMin:",np.min(ucs420_Karan))
print("\nUnique elements:",np.unique(ucs420_Karan))
reshaped_ucs420_Karan=ucs420_Karan.reshape(4,3)
print("\n",reshaped_ucs420_Karan)
resized_ucs420_Karan = np.resize(ucs420_Karan, (2, 3))
print("Resized array (2 rows*3 columns):\n",resized_ucs420_Karan)

```

Mean: 43.333333333333336

Median: 37.5

Max: 90

Min: 10

Unique elements: [10 15 20 30 35 40 50 60 70 80 90]

10	20	30
40	50	60
70	80	90

```
[15 20 35]]  
Resized array (2 rows*3 columns):  
[[10 20 30]  
 [40 50 60]]
```