1. Write a Python Program to find sum of array?

Ans:

##Sum of array

#user defined inputs

input\_strings=input("enter lists of elements separated by space")

#coverting strings into list

user\_list=input\_strings.split()

#converting type of list to float

for i in range(len(user\_list)) :

user\_list[i]=float(user\_list[i])

print("the user list : ",user\_list)

#converting list to array

import numpy as ny

user\_array=ny.array(user\_list)

print("the user array : ",user\_array)

#finding sum of array

print("the sum of array : ",sum(user\_array))

1. Write a Python Program to find largest element in an array?

Ans:

##finding the largest element in an array

#user defined inputs

user\_list=[]#empty list

n=int(input("enter the size of the list :"))#defines the size of list

#adding elements to list

user\_list=list(float(num) for num in input("enter elements to be in list separated by space ").split())[:n]

#printing list

print("the user list : ",user\_list)

#converting list to array

import numpy as ny

user\_array=ny.array(user\_list)

print("the user array : ",user\_array)

##finding largest element

E=user\_array[0]

for i in range(n):

if user\_array[i]>E:

E=user\_array[i]

print("the largest element in the array : ",E)

1. Write a Python Program for array rotation?

Ans:

##Rotation of array

#user defined inputs

input\_strings=input("enter lists of elements separated by space")

#coverting strings into list

user\_list=input\_strings.split()

#converting type of list to float

for i in range(len(user\_list)) :

user\_list[i]=float(user\_list[i])

print("the user list : ",user\_list)

#converting list to array

import numpy as ny

user\_array=ny.array(user\_list)

print("the user array : ",user\_array)

n=len(user\_array)

temp\_array=user\_array#used for modification

#temp\_array\_l=user\_array#used for modification

#Entering the no of steps of rotation

k=int(input("enter the no of steps : "))

#function for right rotation

def rightrotate(U\_A,n,k):

aux=[U\_A[n-k+i]for i in range(k)]#auxillary space to store last 'k' elements

#shifting the 1st n-k elements

for i in reversed(range(n-k)):

U\_A[i+k]=U\_A[i]

#arranging aux elements at correct positions

for i in range(k):

U\_A[i]=aux[i]

return(U\_A)

rightrotate(temp\_array,n,k)#function call

print("the right rotated array : ",temp\_array)

#function for left rotation

def leftrotate(U\_L,n,k):

aux=[U\_L[i]for i in range(k)]#auxillary space to store last 'k' elements

#shifting the last n-k elements

for i in range(k+1):

U\_L[i]=U\_L[i+k]

#arranging aux elements at correct positions

for i in range(k):

U\_L[i+k+1]=aux[i]

return(U\_L)

leftrotate(temp\_array,n,k)#function call

print("the left rotated array : ",temp\_array)

1. Write a Python Program to Split the array and add the first part to the end?

Ans:

#user defined inputs

input\_strings=input("enter lists of elements separated by space")

#coverting strings into list

user\_list=input\_strings.split()

#converting type of list to float

for i in range(len(user\_list)) :

user\_list[i]=float(user\_list[i])

print("the user list : ",user\_list)

#converting list to array

import numpy as ny

user\_array=ny.array(user\_list)

print("the user array : ",user\_array)

n=len(user\_array)

temp\_array=user\_array

k=int(input("enter the step at which u want split : "))

def modify\_split(A,n,k):

aux=[A[i]for i in range(k)]#auxillary space to store last 'k' elements

#shifting the last n-k elements

for i in range(k+1):

A[i]=A[i+k]

#arranging aux elements at correct positions

for i in range(k):

A[i+k+1]=aux[i]

return(A)

leftrotate(temp\_array,n,k)#function call

print("the modified array : ",temp\_array)

1. Write a Python Program to check if given array is Monotonic?

Ans:

#user defined inputs

input\_strings=input("enter lists of elements separated by space")

#coverting strings into list

user\_list=input\_strings.split()

#converting type of list to float

for i in range(len(user\_list)) :

user\_list[i]=float(user\_list[i])

print("the user list : ",user\_list)

#converting list to array

import numpy as ny

user\_array=ny.array(user\_list)

print("the user array : ",user\_array)

n=len(user\_array)

temp\_array=user\_array

def isMonotonic(A):

    return (all(A[i] <= A[i + 1] for i in range(len(A) - 1)) or

            all(A[i] >= A[i + 1] for i in range(len(A) - 1)))

isMonotonic(user\_array)