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

# create an array

arr = [10, 20, 30, 40, 50]

# calculate the sum using a loop

sum = 0

for i in arr:

sum += i

# print the result

print(f"The sum of the array is {sum}")

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

# create an array

arr = [10, 20, 30, 40, 50]

# initialize the maximum element to the first element of the array

max\_elem = arr[0]

# find the largest element using a loop

for i in arr:

if i > max\_elem:

max\_elem = i

# print the result

print(f"The largest element in the array is {max\_elem}")

1. **Write a Python Program for array rotation?**

# create an array

arr = [1, 2, 3, 4, 5]

# get the number of positions to rotate

n = int(input("Enter the number of positions to rotate: "))

# perform rotation using slicing

rotated\_arr = arr[n:] + arr[:n]

# print the result

print(f"The original array is: {arr}")

print(f"The rotated array is: {rotated\_arr}")

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

# create an array

arr = [1, 2, 3, 4, 5]

# get the index to split the array at

n = int(input("Enter the index to split the array at: "))

# split the array and add the first part to the end

split\_arr = arr[n:] + arr[:n]

# print the result

print(f"The original array is: {arr}")

print(f"The split and rotated array is: {split\_arr}")

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

def is\_monotonic(arr):

# check if array is non-increasing

if all(arr[i] >= arr[i+1] for i in range(len(arr)-1)):

return True

# check if array is non-decreasing

elif all(arr[i] <= arr[i+1] for i in range(len(arr)-1)):

return True

else:

return False

# test the function

arr1 = [1, 2, 3, 4, 5]

arr2 = [5, 4, 3, 2, 1]

arr3 = [1, 2, 2, 3, 4]

arr4 = [4, 3, 2, 2, 1]

print(f"{arr1} is monotonic: {is\_monotonic(arr1)}")

print(f"{arr2} is monotonic: {is\_monotonic(arr2)}")

print(f"{arr3} is monotonic: {is\_monotonic(arr3)}")

print(f"{arr4} is monotonic: {is\_monotonic(arr4)}")