1.Write a Python Program to Check if a Number is Positive, Negative or Zero?

```
n = int(input("Enter a number:"))
if n>0:
    print("Number is positive")
elif n==0:
    print("Number equal to zero")
elif n<0:
    print("Number is negative")
```

```
Enter a number:45
Number is positive
```

2.Write a Python Program to Check if a Number is Odd or Even?

```
n = int(input("Enter a number:"))
if n%2==0:
    print("Number is Even")
else:
    print("Number is Odd")
```

```
Enter a number:2
Number is Even
```

3.Write a Python Program to Check Leap Year?

```
n = int(input("Enter a Year"))
if (n%4==0 and n%100!=0) or (n%400 ==0):
    print("It's a Leap year")
else:
    print("It's not a leap year")
```

```
Enter a Year2013
It's not a leap year
```

4.Write a Python Program to Check Prime Number?

```
 n = int(input("Enter a number"))
if n > 1:
        for i in range(2, int(n/2) + 1):
            if (n % i) == 0:
                print(n, "is not a prime number")
                break
        else:
            print(n, "is a prime number")
else:
    print(n, "is not a prime number")
```

```
Enter a number15
15 is not a prime number
```

5. Write a Python Program to Print all Prime Numbers in an Interval of 1-10000?

```
for x in range(1,1000):
       for i in range(2, int(n/2) + 1):
           if (x % i) == 0:
               break
       else:
           print(x)
```

```
913
919
923
929
937
941
943
947
949
953
961
967
```

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

```
def find_sum_of_array(arr):
    return sum(arr)

arr = [1, 20, 3, 14, 5]
result = find_sum_of_array(arr)
print(f"Sum of the array: {result}")
```

```
Sum of the array: 43
```

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

```
lst = []

n = int(input("Enter number of elements : "))

for i in range(0, n):
    ele = int(input())
    lst.append(ele)

print(lst)
largest_element = max(lst)
print(f"Largest element in the array: {largest_element}")
```

```
Enter number of elements : 4
11
32
45
67
[11, 32, 45, 67]
Largest element in the array: 67
```

8. Write a Python Program for array rotation?

```
lst = []

n = int(input("Enter number of elements : "))

for i in range(0, n):
    ele = int(input())
    lst.append(ele)

print(lst)
rotation_steps = 3
rotated_array = lst[rotation_steps:] + lst[:rotation_steps]
print(f"Rotated array: {rotated_array}")
```

```
Enter number of elements : 5
1
2
3
4
5
[1, 2, 3, 4, 5]
Rotated array: [4, 5, 1, 2, 3]
```

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

```
lst = []

n = int(input("Enter number of elements : "))

for i in range(0, n):
    ele = int(input())
    lst.append(ele)

print(lst)
split_position = 2
split_and_added_array = lst[split_position:] + lst[:split_position]
print(f"Array after split and add: {split_and_added_array}")
```

```
Enter number of elements : 5
1
2
3
4
5
[1, 2, 3, 4, 5]
Array after split and add: [3, 4, 5, 1, 2]
```

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

```
lst = []

n = int(input("Enter number of elements : "))

for i in range(0, n):
    ele = int(input())
    lst.append(ele)

print(lst)
increasing = decreasing = True

for i in range(1, len(lst)):
    if lst[i] > lst[i - 1]:
        decreasing = False
    if lst[i] < lst[i - 1]:
        increasing = False

is_monotonic = increasing or decreasing
print(f"The array is monotonic: {is_monotonic}")
```

```
Enter number of elements : 4
2
3
```