1:Write a function to find the maximum element in a array

In [133...

```python
def maximum(array):
    max=array[0]
    for i in range(1,len(array)):
        if array[i]>max:
            max=array[i]
    return max

array=[]
n=int(input("enter the size of array"))
for i in range(n):
    x=int(input(""))
    array.append(x)
large=maximum(array)
print("largest element = ",large)
```

```
enter the size of array5
10
50
30
50
98
largest element =  98
```

2.Write a function to reverse a string x

In [12]:

```python
def stringReverse(name):
    string_rev=""
    for i in range(len(name)-1,-1,-1):
        string_rev+=name[i]
    return string_rev


x=input("Enter the string = ")
y=stringReverse(x)
print("Reverse string is = ",y)
```

```
Enter the string = Hello World
Reverse string is =  dlroW olleH
```

3.Write a function to sort a array in ascending order

In [134...

```python
def sort_array(array):
    array.sort()
    return array

x=list(map(int,input("enter elements of array = ").split()))
```

```python
y=sort_array(x)
print("Sorted Array is = ",*y)
```

```
enter elements of array = 25 36 84 75 65
Sorted Array is =  25 36 65 75 84
```

4.Write a function to calculate the sum of all even numbers between 1 and n.

In [136...
```python
def even_sum(n):
    sum=0
    for i in range(1,n+1):
        if (i%2==0):
            sum=sum+i
    return sum

n=int(input("enter the limit"))
sum=even_sum(n)
print("sum of even numbers between 1 and {}".format(n))
print(sum)
```

```
enter the limit10
sum of even numbers between 1 and 10
30
```

5. Write a function to check if a given number is prime.

In [137...
```python
def prime(n):
    for i in range(2,int(n/2+1)):
        if n%i==0:
            return 0
        else:
            return 1
n=int(input("enter the number "))
y=prime(n)
if(y==0):
    print("{} is not a prime number".format(n))
else:
    print("{} is a prime number".format(n))
```

```
enter the number 2
2 is a prime number
```

6. Write a function to find the second largest number in a array

In [138...
```python
def second_large(array):
    array.sort(reverse=True)
```

```
        return array
x=list(map(int,input("enter the elements of array ").split()))
y=second_large(x)
print("Second Largest = ",y[1])
```

```
enter the elements of array 54 63 25 32 84 75
Second Largest =  75
```

7.Write a function to remove duplicates from a array

In [139…
```
def remove_dupli(array):
    list=[]
    for i in array:
        if i not in list:
            list.append(i)
    return list
x=list(map(int,input("enter the elements of array ").split()))
y=remove_dupli(x)
print("old array= ", *x)
print("new array= ",*y)
```

```
enter the elements of array 10 20 30 30 50 50 62
old array=  10 20 30 30 50 50 62
new array=  10 20 30 50 62
```

8.Write a function to calculate the sum of all numbers in an array

In [140…
```
def sum_array(n):
    sum=0
    for i in n:
        sum=sum+i
    return sum

x=list(map(int,input("enter the elements of array ").split()))
sum=sum_array(x)
print("sum of array = ",sum)
```

```
enter the elements of array 1 2 3 4 5
sum of array =  15
```

9.Write a function to generate all prime numbers up to a given limit

In [141…
```
def prime_limit(n):
    list=[]
    for i in range(1,n+1):
        if i==1 or i==0:
            continue
        else:
            for j in range(2,int(i/2)+1):
```

```
                              if i%j==0:
                                  break
                      else:
                              list.append(i)
        print("prime numbers upto",list)
n=int(input("enter the limit "))
prime_limit(n)
```

```
enter the limit 20
prime numbers upto [2, 3, 5, 7, 11, 13, 17, 19]
```

10.Write a program to find the maximum and minimum elements in an array of integers.

In [142...
```python
x=list(map(int,input("enter the elements of array ").split()))
print("maximum element = ",max(x))
print("minimum element = ",min(x))
```

```
enter the elements of array 10 20 30 50 60 40 5 3
maximum element =  60
minimum element =  3
```

11.Write a function to calculate the factorial of a given number n

In [143...
```python
def fact(n):
    if(n==1):
        return 1
    else:
        return n*fact(n-1)
x=int(input("enter the number"))
factorial=fact(x)
print("factorial of {} is = ".format(x),factorial)
```

```
enter the number6
factorial of 6 is =  720
```

12. Write a function to check given string is palindrome or not

In [144...
```python
def palindrome(s):
    str=s[::-1]
    print("reverse string is = ", str)
    if(str==s):
        print("string is palindrome")
    else:
        print("string is not palindrome")
x=input("enter the string = ")
palindrome(x)
```

```
enter the string = malayalam
reverse string is =  malayalam
string is palindrome
```

13.Write a function to check if a given number is an Armstrong number.

```python
In [145…   def armstrong(n):
               sum=0
               temp=n
               while temp>0:
                   digit=temp%10
                   sum=sum+digit**3
                   temp=int(temp/10)# or use temp//=10
               if n==sum:
                   print("{} is an armstrong number".format(n))
               else:
                   print("{} is not an armstrong number".format(n))

           x=int(input("enter the number"))
           arm=armstrong(x)
```

```
enter the number153
153 is an armstrong number
```

14. A program to print the Fibonacci series

```python
In [146…   def fibonacci(n):
               list=[]
               for i in range(0,n):
                   if i<=1:
                       list.append(i)
                   else:
                       f=0
                       f=list[-1]+list[-2]
                       list.append(f)
               print(list)
           x=int(input("enter the limit "))
           fibonacci(x)
```

```
enter the limit 7
[0, 1, 1, 2, 3, 5, 8]
```

15. Write a program to find the sum of all prime numbers up to a given limit.

```python
In [147…   def prime_limit(n):
               list=[]
               sum=0
               for i in range(1,n+1):

                       if i==1 or i==0:
```

```
                    continue
            else:
                for j in range(2,int(i/2)+1):
                    if i%j==0:
                        break
                else:
                    list.append(i)
                    sum=sum+i
    print("prime numbers upto",list)
    print("sum = ", sum)
n=int(input("enter the limit "))
prime_limit(n)
```

```
enter the limit 10
prime numbers upto [2, 3, 5, 7]
sum =  17
```

16.Write a program to find the sum of all the multiples of 3 or 5 below a given number.

In [148…
```python
def multi(x):
    sum=0
    list=[]
    for i in range(1,x):
        if i%3==0 or i%5==0:
            list.append(i)
            sum=sum+i
    print(list)
    return sum


n=int(input("enter the limit "))
sum=multi(n)

print("sum of all the multiples of 3 or 5 below  {} = ".format(n),sum)
```

```
enter the limit 10
[3, 5, 6, 9]
sum of all the multiples of 3 or 5 below  10 =  23
```

17.Write a program to find the sum of all the even or odd numbers below a given number.

In [149…
```python
def sum_even_odd(x):
    sum_odd=0
    sum_even=0
    list_odd=[]
    list_even=[]
    for i in range(1,x):
            if i%2==0:
                list_even.append(i)
                sum_even+=i
            else:
                list_odd.append(i)
```

```
                    sum_odd+=i
    print("list of even numbers = ", list_even)
    print("sum = ", sum_even)
    print("list of odd numbers = ", list_odd)
    print("sum = ", sum_odd)
n=int(input("enter the limit "))
sum=sum_even_odd(n)
```

```
enter the limit 10
list of even numbers =  [2, 4, 6, 8]
sum =  20
list of odd numbers =  [1, 3, 5, 7, 9]
sum =  25
```

18.Write a program to find the union of two arrays of integers.

In [150...
```
a=[2,4,5,6,7]
b=[1,3,8,10]
union=[]
for i in a:
    if i not in union:
        union.append(i)
for j in b:
    if j not in union:
        union.append(j)
union.sort()
print("union of arrays = ",union)
```

```
union of arrays =  [1, 2, 3, 4, 5, 6, 7, 8, 10]
```

19.Write a program to find the sum of the digits of a given number.

In [151...
```
def sum_digit(x):
    sum=0
    t=x
    while(t>0):
        rem=t%10
        sum=sum+rem
        t//=10
    print("sum = ",sum)
x=int(input("enter the number"))
sum_digit(x)
```

```
enter the number485
sum =  17
```

20.Write a program to count the number of vowels in a given string.

In [152…
```python
x=input("enter the string ")
vowels=['a','e','i','o','u']
count=0
for i in x:
    if i in vowels:
        count+=1
print("no of vowels in {} is = ".format(x),count)
```

```
enter the string manju
no of vowels in manju is =  2
```

In [ ]:

```python
x=input("enter the string ")
vowels=['a','e','i','o','u']
```