

240970107

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In [1]: *# 1. Average of 10 numbers using while loop*

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In [2]: print("Enter The 10 Numbers : \n")
i = 1
total = 0
num = 0

while(i <= 10):
    num = int(input("~"))
    total = total + num
    i = i + 1
print("Average : " , total / 10)
```

Enter The 10 Numbers :

~5

~2

~3

~4

~8

~9

~6

~3

~2

~2

Average : 4.4

In []: *# 2. geometric mean of n numbers*

```
In [9]: n = int(input("Enter The Number Of Elements To Input : "))
numbers = []
for i in range(n):
    num = int(input("Enter The Number : "))
    numbers.append(num)
product = 1
for e in numbers:
    product *= e
geo = product**(1/n)
print("Geometric Mean : ", geo )
```

Enter The Number Of Elements To Input : 5

Enter The Number : 14

Enter The Number : 56

Enter The Number : 33

Enter The Number : 23

Enter The Number : 21

Geometric Mean : 26.263670832582545

In []: *# 3.Check Whether the given integer is a prime number or not*

```
In [2]: num = int(input("Enter Any Number :"))
isprime = True
if num < 2 :
    print("Not A Prime Number")
for i in range(2,(num//2) + 1):
    if(num % i == 0):
        isprime = False
if isprime:
    print("Given Number ", num," Is a prime Number")
else :
    print("Not A Prime Number")
```

Enter Any Number :25
Not A Prime Number

```
In [ ]: # 4.Linear Search And Binary Search
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In [34]: num = [25 , 20 , 35 , 10 , 22 , 12 , 15 , 14 , 13 , 44 , 18 , 63]
lin = int(input("Enter The Element To Search : "))

def linear(num,lin):
    i = 0
    for n in num :
        i = i + 1
        if(n == lin):
            return i
    return -1
linpos = linear(num , lin)
if linpos < 0 :
    print("Linear Search Element Is Not Present")
else :
    print("Linear Search Element Is Present At Position :" , linpos)

def binary_search(arr, target):
    left = 0
    right = len(arr) - 1

    while left <= right:
        mid = (left + right) // 2

        if arr[mid] == target:
            return mid + 1
        elif arr[mid] < target:
            left = mid + 1
        else:
            right = mid - 1

    return -1

num = sorted(num)
print("Sorted List ", num)
binpos = binary_search(num, lin)
if binpos < 0 :
    print("Element Is Not Present")
else :
    print("Element Is Present At Position :" , binpos)

```

```

Enter The Element To Search : 10
Linear Search Element Is Present At Position : 4
Sorted List [10, 12, 13, 14, 15, 18, 20, 22, 25, 35, 44, 63]
Element Is Present At Position : 1

```

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In [ ]: # 5.Using math package, Area of a triangle whose sides are given

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```
In [38]: import math

a = float(input("Enter length of side a: "))
b = float(input("Enter length of side b: "))
c = float(input("Enter length of side c: "))

s = (a + b + c) / 2

area = math.sqrt(s * (s - a) * (s - b) * (s - c))

print("The area of the triangle is: ", area)
```

```
Enter length of side a: 10
Enter length of side b: 20
Enter length of side c: 10
The area of the triangle is: 0.0
```