Logo

STUDENT REPORT

DETAILS

Name

ANJALI

Roll Number

KUB23CSE009

EXPERIMENT

Title

MAGIC STRING

Description

Eva has a string S containing lowercase English letters. She wants to transform this string into a Magic String, where all the characters in the string are the same. To do so, she can replace any letter in the string with another letter present in that string.

Your task is to help Eva find and return an integer value, representing the minimum number of steps required to form a Magic String. Return 0, if S is already a Magic String.

Input Specification:

input1: A string S, containing lowercase English letters.

Output Specification:

Return an integer value, representing the minimum number of steps required to form a Magic String. Return 0, if S is already a Magic String.

Sample Input:

aaabbbccdddd

Sample Output:

8

Source Code:

```
from collections import Counter

def min_steps_to_magic_string(S):
    if len(set(S)) == 1:
        return 0

    freq = Counter(S)

    max_freq = max(freq.values())

    return len(S) - max_freq

S = input()

result = min_steps_to_magic_string(S)
print(result)
```

RESULT

5 / 5 Test Cases Passed | 100 %

STUDENT REPORT

DETAILS

Name

ANJALI

Roll Number

KUB23CSE009

EXPERIMENT

Title

EQUILIBRIUM

Description

You are given an array A of N integers. An equilibrium position is a position where the sum of all integers on its left is equal to the sum of all integers on its right in the array A. Print the index of the equilibrium position.

Note:For any given array there is only a single equilibrium position, if no equilibrium position is found then print "NOT FOUND" without quotes.

The array is 1 indexed.

Input Format:

The input consists of two lines:

The first line contains an integer denoting N.

The second line contains N space-separated integers denoting the elements of the array A.

Input will be read from the STDIN by the candidate

Output Format:

Print the index of the equilibrium position. If no index is found, print "NOT FOUND"

Sample Input

5

2 4 7 3 3

Sample Output

3

Source Code:

```
def find_equilibrium_position(N, A):
    total_sum = sum(A)
    left_sum = 0

    for i in range(N):
        right_sum = total_sum - left_sum - A[i]

        if left_sum == right_sum:
            return i + 1

        left_sum += A[i]

    return "NOT FOUND"

# Input reading
N = int(input())
A = list(map(int, input().split()))
result = find_equilibrium_position(N, A)
print(result)
```

RESULT

5 / 5 Test Cases Passed | 100 %

Logo

STUDENT REPORT

DETAILS

Name

ANJALI

Roll Number

KUB23CSE009

EXPERIMENT

Title

ENCODE THE NUMBER

Description

You work in the message encoding department of a national security agency. Every message that is sent from or received in your office is encoded. You have an integer N, and each digit of N is squared and the squares are concatenated together to encode the original number. Your task is to find and return an integer value representing the encoded value of the number.

input1: An integer value N representing the number to be encoded.

Output :

Return an integer value representing the encoded value of the number.

Sample Input:

167

Sample Output:

13649

Source Code:

```
def encode_number(N):
    str_N = str(N)
    encoded_str = ""

    for digit in str_N:
        squared_digit = int(digit) ** 2  # Square the digit
        encoded_str += str(squared_digit)

    encoded_value = int(encoded_str)

    return encoded_value

# Input reading
N = int(input())

result = encode_number(N)
print(result)
```

RESULT

5 / 5 Test Cases Passed | 100 %

Logo

STUDENT REPORT

DETAILS

Name

ANJALI

Roll Number

KUB23CSE009

EXPERIMENT

Title

PEAK ELEMENT FINDER

Description

Description: You are given an N- dimensional array arr[]. A peak element in the array is defined as an element whose value is greater than or equal to its neighboring elements (if they exist). Your task is to find the index of any peak element in the given array

Note: use 0-based indexing

Input:

An integer representing the number of elements in the array. N space-separated integers, denoting the elements of the array.

N space-separated integers ,denoting the elements of the array arr[]

Sample Input:

5

1 3 20 4 1

Sample Output:

2

Source Code:

```
def find_peak_element(arr):
  n = len(arr)
  if n == 1:
    return 0

  if arr[0] > arr[1]:
    return 0

  if arr[n - 1] > arr[n - 2]:
    return n - 1

  for i in range(1, n - 1):
    if arr[i] > arr[i - 1] and arr[i] > arr[i + 1]:
      return i

  return -1
n = int(input())
arr = list(map(int, input().split()))
index = find_peak_element(arr)

if index != -1:
  print(index)
else:
  print("No peak element found.")
```

RESULT

5 / 5 Test Cases Passed | 100 %

STUDENT REPORT

DETAILS

Name

ANJALI

Roll Number

KUB23CSE009

EXPERIMENT

Title

REVERSE THE ORDER OF STRING

Description

You are given a string containing words separated by spaces. Your task is to write a function or program that reverses the order of words in the string.

Sample Input:

Hello World

Sample Output:

World Hello

Source Code:

```
def reverse_words(string):
    words = string.split()
    words.reverse()
    reversed_string = " ".join(words)
    return reversed_string
input_string = input()
reversed_string = reverse_words(input_string)
print(reversed_string)
```

RESULT

5 / 5 Test Cases Passed | 100 %

Logo

STUDENT REPORT

DETAILS

Name

ANJALI

Roll Number

KUB23CSE009

EXPERIMENT

Title

TARGET SUM

Description

You are given a list of integers, and your task is to write a function that finds the two numbers in the list that add up to a specific target sum. You need to retum the indices of these two numbers.

Write a function that takes a list of Integers and a target sum as input and returns a list of two indices (0-based) of the numbers that add up to the target sum. Assume that there is exactly one solution, and you cannot use the same element twice

Sample Input:

2 7 11 15

9

Sample Output:

[0, 1]

Source Code:

```
def two_sum(nums, target):
    num_to_index = {}  # Dictionary to hold number and its index

    for index, num in enumerate(nums):
        complement = target - num  # Calculate the complement

        # Check if the complement is in the dictionary
        if complement in num_to_index:
            return [num_to_index[complement], index]  # Return the indices

        # Store the number and its index in the dictionary
        num_to_index[num] = index

# Example usage
if __name__ == "__main__":
    import sys

    nums = list(map(int, sys.stdin.readline().strip().split()))  # Read the list of integers
    target = int(sys.stdin.readline().strip())  # Read the target sum

    result = two_sum(nums, target)
    print(result)
```

RESULT

5 / 5 Test Cases Passed | 100 %

STUDENT REPORT

DETAILS

Name

ANJALI

Roll Number

KUB23CSE009

EXPERIMENT

Title

MISSING ALPHABETS

Description

Pangram is a sentence containing every letter in the English alphabet. Given a string, find all characters that are missing from the string, Le., the characters that can make the string a Pangram We need to print output in alphabetic order.

For example,

Input: welcome to geeksforgeeks

Output: abdhijnpquvxyz

Source Code:

```
def missing_characters_to_pangram(input_string):
    # Define the full alphabet
    alphabet = set('abcdefghijklmnopqrstuvwxyz')

    input_chars = set(input_string.lower())

    missing_chars = alphabet - input_chars

    sorted_missing_chars = sorted(missing_chars)

    return ''.join(sorted_missing_chars)

# Input reading
input_string = input()
result = missing_characters_to_pangram(input_string)
print(result)
```

RESULT

5 / 5 Test Cases Passed | 100 %

STUDENT REPORT

DETAILS

Name

ANJALI

Roll Number

KUB23CSE009

EXPERIMENT

Title

SIGNATURE FOR LCM

Description

Given two numbers a and b. Find the GCD and LCM of and b.

Input:

• Two positive integers a and b (1 <=a, b <=1000)

Output:

For GCD function, an integer representing the GCD of a 'and b

For LCM function, an integer representing the LCM of a and b

Sample Input:

12 18

Output:

6

36

Explanation:

The GCD of 12 and 18 is 6. The LCM of 12 and 18 is 36.

Source Code:

```
import math

def gcd(a, b):
    return math.gcd(a, b)

def lcm(a, b):
    return (a * b) // gcd(a, b)

# Input reading
a, b = map(int, input().split())

# Calculate GCD and LCM
gcd_value = gcd(a, b)
lcm_value = lcm(a, b)

print(gcd_value)
print(lcm_value)
```

RESULT

5 / 5 Test Cases Passed | 100 %

STUDENT REPORT

DETAILS

Name

ANJALI

Roll Number

KUB23CSE009

EXPERIMENT

Title

NUMBER OF COMBINATIONS LEADING TO A PRODUCT

Description

Problem Statement:

You are given an array arr and a product m. Your task is to find the number of possible unique triplets whose product of elements is m.

Input Format:

- The first line contains the integer, n
- The second line contains space seperated integers of the array, arr
- The third line contains the product m.

The input will be read from the STDIN by the candidate

Output Format:

The output consists of a single integer, i.e. the count of unique triplets having product m.

The output will be matched to the candidate's output printed on the STDOUT

Example:

Input:

7

5 3 20 10 1 4 2

60

Output:

3

Explanation:

Product m:60

Possible triplets for product m: (5,4,3),(20,3,1), (10,3,2)

The count of unique triplets is 3.

Source Code:

```
def count_triplets(arr, n, m):
    unique_triplets = set()
    for i in range(n):
        for j in range(i + 1, n):
            for k in range(j + 1, n):
                if arr[i] * arr[j] * arr[k] == m:
                    triplet = tuple(sorted([arr[i], arr[j], arr[k]]))
                    unique_triplets.add(triplet)

    return len(unique_triplets)

# Input Reading
n = int(input())
arr = list(map(int, input().split()))
m = int(input())

result = count_triplets(arr, n, m)
print(result)
```

RESULT

6 / 6 Test Cases Passed | 100 %

Logo

STUDENT REPORT

DETAILS

Name

ANJALI

Roll Number

KUB23CSE009

EXPERIMENT

Title

SPACE COUNTER

Description

You have been given the task of making the content on a social media platform more user-friendly. Your task is to find and return an integer value representing the count of the number of spaces in a given string S.

Input:

A string S

Output :

Return an integer value representing the count of the number of spaces in a given string S.

Example:

Input:

Hello World Hey

Output:

2

Source Code:

```
def count_spaces(S):
    return S.count(' ')

# Example usage
S =input()
space_count = count_spaces(S)
print(space_count)
```

RESULT

5 / 5 Test Cases Passed | 100 %

Logo

STUDENT REPORT

DETAILS

Name

ANJALI

Roll Number

KUB23CSE009

EXPERIMENT

Title

SUM OF NUMBERS AT PRIME FACTORS

Description

Prime factors of a positive integer are the prime numbers that divide that integer exactly.

Given an array arr of n integers and a positive integer num.

Let's suppose prime factorization of num is: $p^a \times q^b \times r^c \times .... \times z^f$,where p,q,r...z are prime numbers.

Sum of numbers in array arr at indices of prime factors of number num is: a x arr[p] + b x arr[q] + c x arr[r] +..... + f x arr[z].

You are given an array arr of size n and a positive integer num. You are required to calculate the sum of numbers in arr as mentioned above, and print the same.

Note:

- If arr is empty, print -1.
- If prime factor of num not found as indices, print 0.

Input Format:

The input consists of three lines:

- The first line contains an integer, i.e. n.
- The second line contains an array arr of length of n.
- The third line contains an integer num

The input will be read from the STDIN by the candidates.

Output Format:

Print the sum that was mentioned in the problem statement.

Example:

Input:

6

11 21 32 45 1 23

6

Output:

77

Explanation:

$6=2^1 \times 3^1$

sum=1*arr[2]+1*arr[3]=1*32+1*45=77

Source Code:

```
from collections import defaultdict

def prime_factors(num):
    factors = defaultdict(int)

    while num % 2 == 0:
        factors[2] += 1
        num //= 2
    for i in range(3, int(num**0.5) + 1, 2):
        while num % i == 0:
            factors[i] += 1
            num //= i
    if num > 2:
        factors[num] += 1

    return factors

def calculate_prime_index_sum(arr, num):
    if not arr:
        return -1

    factors = prime_factors(num)
    total_sum = 0
    valid_prime_found = False

    for prime, power in factors.items():
        if prime < len(arr):
            total_sum += power * arr[prime]
            valid_prime_found = True

    return total_sum if valid_prime_found else 0


if __name__ == "__main__":
    n = int(input())
    arr = list(map(int, input().split()))
    num = int(input())

    result = calculate_prime_index_sum(arr, num)
    print(result)
```

RESULT

4 / 5 Test Cases Passed | 80 %

Logo

STUDENT REPORT

DETAILS

Name

ANJALI

Roll Number

KUB23CSE009

EXPERIMENT

Title

VOWEL REPETITION PROBLEM

Description

Given a string s print the most frequent vowel that is present in the string as a output.

Input Format:

A single line containing the string s.

The input will be read from the STDIN by the candidate

Output Format:

Print a single character which represents the most frequent vowel in the given string.

Example:

Input:

helloworld

Output:

o

Source Code:

```
s=input()
v='aeiou'
d={ }
mx=0
for i in s:
    if i in v:
        if i in d:
            d[i]+=1
        else:
            d[i]=1
        if d[i]>mx:
            mx=d[i]
            ans=i
print(ans)
```

RESULT

5 / 5 Test Cases Passed | 100 %

Logo

STUDENT REPORT

DETAILS

Name

ANJALI

Roll Number

KUB23CSE009

EXPERIMENT

Title

ELECTIONS

Description

You are the head of the election committee in your village. Each Political party is associated with a unique number and the votes are represented as an integer array A. where each element contains the party number voted for by the villagers. For a party to win, they must have a majority of votes. our task is to find and return an integer value denoting the winning party's number. Return -1 if there is no party with a majority.

Note: If only one vote is there he is the winner.

Input Format :

input1: An integer value representing the number the number of voters

input2: An integer array A representing the votes of the voters.

output Format:

Return an integer value denoting the winning party's number.Return -1 there is no party with a majority

Example 1:

Input:

6

1 1 2 2 2 3

Output:

2

Explanation:

As 2 got the most number of votes i.e 3.

Example 2:

Input:

6

1 2 1 1 2 2

Output:

-1

Explanation:

As both the contestants got same votes there is no majority.

Source Code:

```
n=int(input())
arr=list(map(int,input().split()))
d={ }
if n==1:
    print(arr[0])
else:
    for i in arr:
        if i not in d:
            d[i]=1
        else:
            d[i]+=1
    x=sorted(d.items(),key=lambda x:x[1], reverse =True)
    if x[0][1]==x[1][1]:
        print(-1)
    else:
        print(x[0][0])
```

RESULT

6 / 6 Test Cases Passed | 100 %

Logo

STUDENT REPORT

DETAILS

Name

ANJALI

Roll Number

KUB23CSE009

EXPERIMENT

Title

DOG AGE

Description

Max has a dog, which is an integer N years old. Now he wants the age of his dog in human years. The internet says that 1 dog year equals to 7 human years. Your task is to find and return an integer value representing the age of Max's dog in human years.

Input Format:

input1: An integer value N representing the age of Max's dog

Output Format:
Return an integer value representing the age of Max's dog in human years

Example:
Input:
4
Output:
28

Source Code:

```
n=int(input())
print(n*7)
```

RESULT

5 / 5 Test Cases Passed | 100 %

STUDENT REPORT

DETAILS

Name

ANJALI

Roll Number

KUB23CSE009

EXPERIMENT

Title

DIWALI CONTEST

Description

Max is planning to take part in a Diwali contest at a Diwali Party that will begin at 8 PM and will run until midnight (12 AM) i.e., for 4 hours. He also needs to travel to the party venue within this time which takes him **P** minutes. The contest comprises of **N** problems that are arranged in order of difficulty, with problem 1 being the simplest and problem N being the most difficult. Max is aware that he will require 5*i minutes to solve the i^{th} problem.

Your task is help Max find and return an integer value, representing the number of problems Max can solve and reach the party venue within the given time frame of 4 hours.

Note: Max will leave his home at exactly 8 PM to reach the party venue.

Input Format:

input1: An integer value N, representing the total number of problems.

input2: An integer value P, Representing the time to travel in minutes from his home to the party venue.

Example:

Input:

6

180

Output:

4

Explanation:

The amount of time left to solve the problems is 4*60-180=60 mins.

1st Problem - 5 mins, Time left = 60-5=55 mins

2nd Problem - 10 mins, Time left = 55-10=45 mins

3rd Problem - 15 mins, Time left = 45-15=30 mins

4th Problem - 20 mins, Time left = 30-20=10 mins

5th Problem - 25 mins

So he can solve only 4 problems as he is not left with 25 mins to complete 5th problem.

Source Code:

```
n=int(input())
p=int(input())
lefttime=4*60-p
i=1
while i<=n and lefttime>=5*i:
    lefttime-=5*i
    i+=1
print(i-1)
```

RESULT

5 / 5 Test Cases Passed | 100 %

Logo

STUDENT REPORT

DETAILS

Name

ANJALI

Roll Number

KUB23CSE009

EXPERIMENT

Title

CHOCOLATE JAR

Description

You are given an integer array of size N, representing jars of chocolates. Three students A, B, and C respectively, will pick chocolates one by one from each chocolate jar, till the jar is empty, and then repeat the same with the rest of the jars. Your task is to fine and return an integer value representing the total number of chocolates that student A will have, after all the chocolates have been picked from all the jars.

Note: Once a jar is done A will start taking the chocolates from the new jar.

Input Format :

input1: An integer value N representing the number of jars.

input2: An integer array representing the quantity of chocolates in each jar.

Output Format:

Return an integer value representing the total number of chocolates that student A will have, after all the chocolates are picked.

Example:

Input:

3

10 20 30

Output:

21

Explanation:

Jar 1: 10 chocolates -> A-4, B-3,C-3

Jar 2: 20 chocolates -> A-7, B-7, C-6

Jar 3: 30 chocolates -> A-10, B-10,C-10

so A gets a total of 4+7+10=21 chocolates.

Source Code:

```
n=int(input())
arr=list(map(int,input().split()))
summ=0
for i in arr:
    if i%3==0:
        summ+=(i//3)
    elif i%3>0:
        summ+=(i//3)+1
print(summ)
```

RESULT

5 / 5 Test Cases Passed | 100 %

Logo

STUDENT REPORT

DETAILS

Name

ANJALI

Roll Number

KUB23CSE009

EXPERIMENT

Title

ANT ON RAIL

Description

There is a ant on your balcony.It wants to leave the rail so sometimes it moves right and sometimes it moves left until it gets exhausted.Given an integer array A of size N which consists of integer 1 and -1 only representing ant's moves.

Where 1 means ant moved unit distance towards the right side and -1 means it moved unit distance towards the left .Your task is to find and return the integer value representing how many times the ant reaches back to original starting position.

Note:

- Assume 1-based indexing
- Assume that the railing extends infinitely on the either sides

Input Format:

input1 : An integer value N representing the number of moves made by the ant.

input2 : An integer array A consisting of the ant's moves towards either side

Sample Input

5

1 -1 1 -1 1

Sample Output

2

Source Code:

```
n=int(input())
arr=list(map(int,input().split()))
summ=0
count=0
for i in range(len(arr)):
    summ+=arr[i]
    if summ==0:
        count+=1
print(count)
```

RESULT

5 / 5 Test Cases Passed | 100 %

Logo

STUDENT REPORT

DETAILS

Name

ANJALI

Roll Number

KUB23CSE009

EXPERIMENT

Title

ADVACED SUB ARRAY PROBLEM

Description

You are competing in a basketball contest. In this contest the score for each successful shot depends on both the distance from the basket and the player's position. The ball is shot N times, successfully. You are given an array A containing the distance of a player from basket for N shots. The index of array represents the position of the player. Score is calculated by multiplying the position with the distance from the basket.

Your task is to find and return an integer value, representing the maximum possible score you can achieve by choosing a contiguous subarray of size K from the given array.

Note:

* A subarray is a contiguous part of array.

* Assume 1 based indexing.

* The array contains both negative and positive values.

* Assume the player is standing on a cartesian plane.

Input Format

- **input1**:An integer value N representing the number of shots made by the player

- **input2** : An integer K representing the size of subarray

- i**nput3 :** An array of integers

Sample Input

5
2
1 2 3 4 5

Sample Output

14

Source Code:

```
n=int(input())
sub=int(input())
arr=list(map(int,input().split()))
maxx=0
for i in range(0,n-sub+1):
    a=arr[i:i+sub]
    summ=0
    inc=1
    for j in a:
        summ=summ+(j*inc)
        inc+=1
    if summ > maxx:
        maxx=summ
print(maxx)
```

RESULT

5 / 5 Test Cases Passed | 100 %

STUDENT REPORT

DETAILS

Name

ANJALI

Roll Number

KUB23CSE009

EXPERIMENT

Title

MINIMUM ARRAY SUM

Description

Paul is given an array A of length N. He must perform the following Operations on the array sequentially:

* Choose any two integers from the array and calculate their average.

* If an element is less than the average, update it to 0. However, if the element is greater than or equal to the average, he need not update it.

Your task is to help Paul find and return an integer value, representing the minimum possible sum of all the elements in the array by performing the above operations.

Note: An exact average should be calculated, even if it results in a decimal.

Input Format:

input1: An integer value N, representing the size of the array A.

input2: An integer array A.

Output Format:

Return an integer value, representing the minimum possible sum of all the elements in the array by

Sample Input

5
1 2 3 4 5

Sample Output

5

Source Code:

```
def min_sum(arr):
    arr.sort(reverse=True)
    total = arr[0]
    avg = arr[0]

    for i in range(1, len(arr)):
        if arr[i] < avg:
            break
        total += arr[i]
        avg = (total) / (i + 1)

    return total

n = int(input())
arr = list(map(int, input().split()))

result = min_sum(arr)
print(result)
```

RESULT

5 / 5 Test Cases Passed | 100 %

Logo

STUDENT REPORT

DETAILS

Name

ANJALI

Roll Number

KUB23CSE009

EXPERIMENT

Title

MATHS TEST

Description

Alice has a mathematics test for which she is underprepared. She has to do at least one question correctly to pass the test. He decides to do a question which needs her to find the smallest prime number which is larger than a given integer N. Your task is to find and return an integer value representing the smallest prime number larger than N.

Input Format:

input1: An integer value N

Output Format:

Return an integer value representing the smallest prime number larger than N.

Sample Input

6

Sample Output

7

Source Code:

```
def next_prime(N):
  num = N + 1


  while True:

    is_prime = True
    for i in range(2, int(num**0.5) + 1):
      if num % i == 0:
        is_prime = False
        break


    if is_prime:
      return num


    num += 1

N = int(input())

result = next_prime(N)


print(result)
```

RESULT

5 / 5 Test Cases Passed | 100 %