Umesh

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SDE TEST

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1) Given a non-negative integer n, check if it is possible to build a pyramid of '*' and empty paces where first row has one '*' and second has three '*' and so on.
For example-
Input: n = 9 output: True
Explanation : The pyramid can be built
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Input: n = 6 Output : False
Explanation : The pyramid cannot be build as last row will be incomplete
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2) Write a function:
void solution (int N);

that, given a positive integer N, prints the consecutive numbers from 1 to N, each on a separate line. However, any number divisible by 3, 5 or 7 should be replaced by the word Fizz, Buzz or Woof respectively.

If a number is divisible by more than one of the numbers: 3, 5 or 7, it should be replaced by a concatenation of the respective words Fizz, Buzz and Woof in this given order. For example, numbers divisible by both 3 and 5 should be replaced by FizzBuzz and numbers divisible by all three numbers: 3, 5 and 7, should be replaced by FizzBuzzWoof.

For example, here is the output for N = 24:
1 2 Fizz 4 Buzz Fizz Woof 8 Fizz Buzz 11 Fizz 13 Woof FizzBuzz 16 17 Fizz 19 Buzz FizzWoof 22 23 Fizz

The function shouldn't return any value.

You can print a string to the output (without or with the end-of-line character) as follows:
Printf ("sample string") ; printf("whole line\n");

Assume that:
- N is an integer within the range [1..1,1000].

In your solution, focus on correctness. The performance of your solution will not be the focus of the assessment.

3) There are N coins, each showing either heads or tails. We would like all the coins to show the same face. What is the minimum number of coins that must be reversed?

Write a function:
int solution (int A[], int N) ;
that, given a zero-indexed array A consisting of N integers representing the coins, returns the minimum number of coins that must be reversed. Consecutive elements of array A represent consecutive coins and contain only a 0 (heads) or a 1 (tails).

For example, given array A = [1, 0, 0, 1, 0, 0], there are four coins showing heads and two coins showing tails. The function should return 2, as after reversing two coins (in positions 0 and 3), all the coins will be showing the same face (heads).

Assume that:

- N is an integer within the range [1..100];
- each element of array A is an integer that can have one of the following values: 0, 1.

In your solution, focus on correctness. The performance of your solution will not be the focus of the assessment.

4) Write a function:
int solution (vector<int> & A);

that, given an array A consisting of N integers, returns the sum of all two-digit integers.

For example, given array A as follows:
[-6, -91, 1011, -100, 84, -22, 0, 1, 473]

The function should return -29.

Assume that:

- N is an integer within the range [1..1,000];
- Each element of array A is an integer within the range [-10,000..10,000];
- There is at least one element in an array A which satisfies the conditions in the task statement.

In your solution, focus on correctness. The performance of your solution will not be the focus of the assessment.

5) Write a function that takes an integer array as input and prints the largest and smallest number from that array?

Ex. for array [10 ,20, -40, 48, -40, 0] the desired output will be
Min = -40
Max = 48

6) Write a function
string replace_occurrences(string input);

that given a string, replaces repeated alphabets in the string with their number of occurrences. Example aabbaa -> a2b2a2 not a4b2

7) Write a function that takes an integer array as input and prints all the unique numbers from that array?

Ex. for array [10, 20, -40, 48, -40, 0] the desired output will be
[10, 20, -40, 48, 0]