

Problem

Problem : Create a program to calculate the sum of all natural numbers up to a given number n.
The program should prompt the user for an integer input n and use a for loop to compute the sum.

Explanation

First, we initialize the essential variables to store the data values, then we start with output questions for the user to input their desired number. After that, create a for loop up from 1 up to the value of the number the user inputted. Inside the loop, the result will be added by the number of i. At the end, the program will output the sum of all natural numbers up to the user's desired number

Benefit

By using this program, users would be able to find and calculate the sum of all natural numbers up to a given number n inputted by the user. This program would benefit them by calculating the sum of numbers more effectively, efficiently and accurately.

The Code Explained

```
#include <iostream>
using namespace std;

int main() {
    //variables
    int n,i,c; ⇒ initialize integers to store the values of n=limit of number, i=for loop, c=result

    //input
    cout << "Enter a number: "; ⇒ output question for the user to input a number
    cin >> n; ⇒ store the user's input of number to an integer called "n"

    // operation
    for (i=1; i<=n; i++) { ⇒ create a for loop for natural numbers up until the number the user
inputted
        c += i; ⇒ add the value of i to the result ("c")
    }

    // output
    cout << "Sum = " << c; ⇒ output the result of sum

    return 0;
}
```