Developer Assignment

Taxcoin to the future

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| Author: | TaxModel IT |
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# Introduction

To test the quality of your engineering skills, we have a programming assignment. It is up to you to the create a solution for the assignment. We want you to develop it in C#. Think like an engineer and not like a script-kiddy. Expect that your code will run in a production environment. Once you are satisfied with your solution we expect you to send us the project files, which we will validate.

# Assignment

## Description

## In the near future, after you have introduced the Taxcoin with great success, you acquire almost supernatural programming skills. You write a Flux Capacitor Algorithm that is able to predict the exchange rate in euros of Taxcoin (the most used Internet currency) for a period of time. Now, you need to write a program that, given a list of Taxcoin exchange rates for a period of time and your initial budget, calculates the maximum number of euros that you are going to have at the end of the period. That is, the amount of euros you can earn plus your initial budget.

## The exchange rate is always an integer, you can't buy a fraction of a Taxcoin and you can sell or buy Taxcoins at any moment, as many times as you want.

## Input

Each test case consists of one integer N (1 ≤ N ≤ 100), indicating your initial budget in euros. In the next line, there is a list of integers indicating the future value of Taxcoin at different times in a fixed period.

## Output

## The maximum amount of euros that you will have at the end

## Example

**INPUT**

3  
1 2 10 6

**OUTPUT**

30

**Explanation**

Initial budget: 3  
List of exchange rates: 1, 2, 10, 6

You buy at 1 euro per Taxcoin and sell at 10 euros per Taxcoin, so at the end you will have 30 euros.

# Sample sets

Attached in your email you will find three sample sets:

* sampleInput.txt – The input contained in the chapter 2.2.
* testInput1.txt – A slightly larger test input for testing your solution of which the output is 200.
* testInput2.txt – A test input for testing your solution of which the output is 3750.
* testInput3.txt – A test input for testing your solution of which the output is 265.
* testInput4.txt – A test input for testing your solution of which the output is 117.
* submitInput.txt – The largest test input for which the output is not given, and we use for validating your solution.