

2.3 Partial Sums

Due 16 Sep 2019 by 23:59 **Points** 0 **Submitting** an external tool

Write a program that computes all partial sums of the natural numbers ranging from 1 up to an upper limit n . Use a *vector* to store the partial sums. Do not compute any partial sum more than once! This brings down the computational complexity from $O(n^2)$ to $O(n)$. (Please check the syllabus of *Computational Thinking* if you are not familiar with the "big-O notation" yet.)

Your program should first ask the user to enter the upper limit n . Then it should ask the user for a particular partial sum $1 + \dots + x$ he or she would like to know. Then, your program should print the partial sum up to x , followed by the entire sequence of partial sums from 1 up to n .

You can assume that the user only enters valid values for both n and x .

A correct output of your program looks like this:

```
Summing up 1 to n, please enter n: 8
Which partial sum (1+...+x) would you like to know? Please enter x<=n : 3
1+2+3 = 6
The entire sequence of partial sums up to 8 is: 1 3 6 10 15 21 28 36
```

This tool needs to be loaded in a new browser window

Load 2.3 Partial Sums in a new window

