# Day 0: Weighted Mean

HackerRank

**Objective**

In the previous challenge, we calculated a *mean*. In this challenge, we practice calculating a *weighted mean*. Check out the Tutorial tab for learning materials and an instructional video!

**Task**

Given an array, $X$, of $N$ integers and an array, $W$, representing the respective weights of $X$'s elements, calculate and print the weighted mean of $X$'s elements. Your answer should be rounded to a scale of $1$ decimal place (i.e., $12.3$ format).

**Example**

$X = [1, 2, 3]$
$W = [5, 6, 7]$

The array of values $X[i] * W[i] = [5, 12, 21]$. Their sum is $38$. The sum of $W = 18$. The weighted mean is $\frac{38}{18} = 2.11111...$. Print $2.1$ and return.

**Function Description**

Complete the *weightedMean* function in the editor below.

*weightedMean* has the following parameters:
- *int X[N]:* an array of values
- *int W[N]:* an array of weights

**Prints**

- *float:* the weighted mean to one decimal place

**Input Format**

The first line contains an integer, $N$, the number of elements in arrays $X$ and $W$.
The second line contains $N$ space-separated integers that descdribe the elements of array $X$.
The third line contains $N$ space-separated integers that descdribe the elements of array $W$.

**Constraints**

- $5 \leq N \leq 50$
- $0 < X[i] \leq 100$, where $X[i]$ is the $i^{th}$ element of array $X$.
- $0 < W[i] \leq 100$, where $W[i]$ is the $i^{th}$ element of array $W$.

**Output Format**

Print the *weighted mean* on a new line. Your answer should be rounded to a scale of $1$ decimal place (i.e., $12.3$ format).

**Sample Input**

```
STDIN           Function
-----           --------
5               X[] and W[] size n = 5
10 40 30 50 20  X = [10, 40, 30, 50, 20]
1 2 3 4 5       W = [1, 2, 3, 4, 5]
```

**Sample Output**

```
32.0
```

**Explanation**

We use the following formula to calculate the weighted mean:

$$m_w = \frac{\sum_{i=0}^{N-1}(x_i \times w_i)}{\sum_{i=0}^{N-1} w_i} \Rightarrow m_w = \frac{10 \times 1 + 40 \times 2 + 30 \times 3 + 50 \times 4 + 20 \times 5}{1 + 2 + 3 + 4 + 5} = \frac{480}{15} = 32.0$$

And then print our result to a scale of $1$ decimal place ($32.0$) on a new line.