HW4.8. RISC-V Coding

Write a function `mean`, which follows the following specification:
Input: a0, a1, a2, and a3 contain (signed) integers, with
$\max(|a0|, |a1|, |a2|, |a3|) \leq 500,000,000$
Output: Return in a0 the arithmetic mean of the input values. If the mean is not an integer, round the number down.
Example: If a0 contains 1, a1 contains 2, a2 contains 3, and a3 contains 4, then the mean is $\frac{1+2+3+4}{4} = 2.5$. Thus, the expected output is 2.
Example: If a0 contains -1, a1 contains -2, a2 contains -3, and a3 contains -4, then the mean is $\frac{-1-2-3-4}{4} = -2.5$. Thus, the expected output is -3.
Hint: RISC-V standard does not have a division instruction or a multiplication instruction. However, some other instruction can be used to divide by certain numbers. What instruction is that?
Assume that all registers, aside from those that are already provided, will initially contain garbage data.
Make sure you follow calling convention!

Editor | Simulator

mean.s

```
1  .globl mean
2
3  .text
4  main:
5      li a0 1
6      li a1 2
7      li a2 3
8      li a3 4
9      jal ra, mean
10
11     addi a1, a0, 0
12     addi a0, x0, 1
13     ecall # Print Result
14
15     addi a1, x0, '\n'
16     addi a0, x0, 11
17     ecall # Print newline
18
19     addi a0, x0, 10
20     ecall # Exit
21
22 mean:
23     # YOUR CODE HERE
```

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Homework 4

Assessment overview

Total points: 80/100

Score:

Question

Value: 20

History:

Awarded points: 0/20

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