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1. Some of the notable obstacles I had to overcome were organization of my thoughts into code and keeping my code clean. For the first obstacle, I would start thinking of the logic of my code and try to think it all the way through. I would often lose track of my train of thought and would start coding with no real end goal in mind. As I progressed with the project, I realized that it would be much easier and much more efficient to put my thoughts down on paper so that I could reference these notes later to remind myself of what the block of code I was working on was meant to do. The second obstacle was that I often got lost in my code because I forgot to comment in my code. I had to go back and put the comments back in. Then, it became easier to manage and keep track of my thoughts and what the code was doing at a certain line.
2. (Professor Stahl noted in the discussion forums that since pseudocode has not been addressed, that part of the question does not need to be addressed) My program is designed in this way: the isValidRowerString() function first checks that all the fields are present and correct. Then, every other function relies on the isValidRowerString() function to first check whether isValidRowerString = false, in which case the function would immediately return -1, or if it can continue to find the value of that field. There were several check that were put in to check for correct input. These included checking between fields to ensure that were no random characters in the white space, the amount of space between units and their corresponding values was just one, and that the values were within their proper range.

c. Test cases

Test cases that are valid strings:

normal string

(":14 28 s/m 42 m 110")

string with spaces between fields

(" :14 28 s/m 42 m 110")

minimum fields

(":14 28 s/m 42 m 110")

(":00 28 s/m 42 m 110")

("1:14 1 s/m 42 m 110")

("1:14 28 s/m 1 m 110")

("1:14 28 s/m 42 m 1")

max fields

("59:14 28 s/m 42 m 110")

("59:59 28 s/m 42 m 110")

("59:59 999 s/m 42 m 110")

("59:59 999 s/m 42 m 999")

fields with zero

("50:59 999 s/m 42 m 999")

("59:50 999 s/m 42 m 999")

("59:59 900 s/m 42 m 999")

("59:59 999 s/m 40 m 999")

("59:59 999 s/m 42 m 900")

Test cases that are not valid strings:

first char is not digit or :

("asdf:14 28 s/m 42 m 110")

last char is not digit

(":14 28 s/m 42 m 110 asdf")

extra spaces where there should not be

(":14 28 s/m 42 m 110")

(":14 28 s/m 42 m 110")

(":14 28 s/m 42 m 110 ")

leading zeroes

("000:14 28 s/m 42 m 110")

(":14 00028 s/m 42 m 110")

(":14 28 s/m 00042 m 110")

(":14 28 s/m 42 m 000110")

negative numbers

(":-14 28 s/m 42 m 110")

(":14 -28 s/m 42 m 110")

(":14 28 s/m -42 m 110")

(":14 28 s/m 42 m -110")

fields go beyond max value

("555:14 28 s/m 42 m 110")

(":555 28 s/m 42 m 110")

(":14 99123 s/m 42 m 110")

(":14 28 s/m 42 m 1000")

zero fields

(":14 0 s/m 42 m 110")

(":0 28 s/m 42 m 99123")

(":14 28 s/m 42 m 0")

incorrect input of seconds

(":7 28 s/m 42 m 100")

("12: 28 s/m 42 m 100")

char where there should not be

(":14 28 s/m jkf 42 m 110")

(":14 28 s/m 42 m jkdsf 110")

(":14 jfks 28 s/m 42 m 110")

missing fields

("1: 28 s/m 42 m 110")

("28 s/m 42 m 110")

(":14 42 m 110")

(":14 28 s/m 110")

(":14 28 s/m 42 m")