Thinking Like a Programmer

Breaking Down Problems

There is one more type of challenge you will look at in this lesson; deconstructing word problems. This type of problem is the most challenging for many people. Word problems, while potentially intimidating, closely resemble real-world programming tasks. It is very unlikely that you will be handed a well-written specification from a client, instead of a verbal or text based communication to express the desired solution. The actual implementation of that solution requires you to pick apart what you have been given, to connect what is being asked for with a set of tools you have at your disposal, and then, to formulate a plan as to how you will go about solving the problem.

Consider the problem statement:

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I have a list of scores from a survey sent out to our clients. I want to know
how well we did across all the scores as a single number.
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What data is present in this sentence? What kind of data is it?

After you've come up with an answer, hover your mouse pointer here.

Once you know the basic elements that are available, you can determine what to do with them. Should you add all the numbers together? Should you pick the largest or the smallest number?

The problem is asking for a single number that represents the values of all the individual scores. None of the suggestions above would accomplish this.

If you have several very high numbers and a few low numbers, you would expect the answer to be relatively high. If you had several low numbers and one single high number, you might expect the answer to be higher than your low numbers but well below the single high number.

So, what kind of operation is being asked for here?

After you've come up with an answer, hover your mouse pointer here.

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