One characteristic of programming languages that varies widely from language to language is how parameters are passed. Among ALGOL, Pascal, Ada, C, C++, Java, and C#, no two languages pass parameters in exactly the same way. Among these languages, choose the one that you believe has adopted the best approach to parameter passing. Defend your decision by outlining the advantages of the approach of the language that you chose and the disadvantages of the approaches taken by other languages.

Answer:

It seems like this is one of those things that a language has to decide which way to go. I’ll play devil’s advocate and argue for passing values like JAVA does.

Whether the language should be easy to learn, and not easy to make a mistake with, or if you should have more flexibility but lose readability, seems to be a key issue for this question. I think there’s definite value in code that is easy (if not obvious) to read and write. I’ll argue it’s well worth a couple of extra lines of code to make it obvious what’s going on, and “not allow” mistakes to happen, vs. the ease of passing a few parameter references and possibly making a mistake.

I will concede that C# passing of references has its place, and can make certain use cases faster. I would counter with it depends on HOW much faster. One would have to do a cost benefit analysis of slightly faster code (the speed benefit is diminishing, as java is starting to catch up to the C languages) vs the possibility of a mistake.

I’m not very familiar with C#, but according to some research you can’t use an iterator method to output a reference. Whereas with Java you can.

I would argue for the idea that certain languages are faster, and probably harder to learn/ pick up where someone else left off. VS other languages that are simpler and a bit slower. So depending on what you are coding for you can pick whichever language better suits your needs.

Parameter Passing

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Stephanie Simpler - Feb 15, 2014 1:16 PM

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I don’t have much experience with it myself, but I agree that C# seems to have the best approach to how parameters are passed.I would think that allowing the programmer to choose by value or by reference, assuming they know how to do it correctly, would allow for more functionality than a language that does not offer this, like Java. I also think that there are benefits to keeping it simple. I think a beginner would have an easier time with a language like Java because there is only one way to pass parameters. They cannot mistakenly pass by reference, which might have them diving deep into how the code works to try and figure out the results they are seeing. Java was the first language I learned, and I think it was good for me.

Our reading mentions that in early versions of Fortran, parameters passed had no syntax restrictions, and how it let programmers cause errors by changing values of constants. Programmers who are more experienced can use these options as fine-tuning, creating more complex programs than what can be written with languages like Java. I think that as a beginner, though, the power and freedom to cause such problems in my code would have scared me away.

Parameter Passing openedCollapse Replies

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Alin Suciu - Feb 15, 2014 4:55 PM

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Stephanie,

you are right: too much freedom in programming things may be scarry for the programmer.

Alin