

1) Was one language easier or faster to write the code for this? If so, describe in detail why, as in what about the language made that the case.

Yes, among Java, Perl, and Python, Python was the easiest to work with and the fastest to write. I was done in about 10 minutes with Python. Python has many built in methods that you can use to complete a task that would take 3-4 lines in other languages, in one line. Methods like “isdir” and “listdir” made the task a lot simple to complete. Other than the methods itself, python was a lot simpler to code than Perl or Java, possibly due to it not being as syntactically strict as other languages. Perl did have pre-built functions similar to Python. However, since you have to type my \$ for every variable and my @ for arrays, it was a lot more prone to errors than python. For this code, rather than the code itself, errors were what took most of the time. Therefore, since python was much easier to read and took a lot less typing to do what Perl and Java did, it was a lot easier to catch any small mistakes that were made.

2) Even though a language may not (e.g. FORTRAN) does not support recursion, describe how you could write a program to produce the same results without using recursion. Would that approach have any limitations and if so, what would they be?

Even if a language, like FORTRAN for example, does not support recursion, there are still ways in which you could write a recursive program. This is because anything that can be done through recursion, can also be done through iteration. In order to do that, you need to make the base case of the recursion into the condition for the loop (usually while loop). One limitation of using iteration rather than recursion for a recursive problem would be that a legacy code written in recursion would be a lot simpler to understand than the one that is done through iteration. This is because a problem becomes a lot more complex and would take a lot more lines of code when written in iteration rather than recursion.