Recursive method: Using recursion to calculate the Fibonacci sequence is by far the simplest and most intuitive way to program the calculation. Recursion allows the larger issue of calculating a Fibonacci number at a given index to be broken down into any number of required sub problems, greatly simplifying the process of the calculation, but for this application is exponentiallyslower than the iterative and closed form methods due to the massive amount of stack space required for determining larger Fibonacci numbers.

Iterative method: The iterative method is faster than the recursive and closed form methods. Although the fastest, the iterative method isn’t nearly as intuitive as the recursive method do to the extra variables and steps required to calculate the Fibonacci sequence iteratively. Since it is less intuitive, the code required is ambiguous, introducing more opportunities for bugs and programming errors.

Closed form method: The closed form method is very fast, and relatively simple to code due to the formula already being contrived. It isn’t nearly as intuitive as the recursive method because it does require type casting and number rounding to return the correct number, and requires a great deal of precision to code. A significant drawback to the closed form method is that it requires a function that can be solved analytically. For the Fibonacci sequence this is of no substance, but must be taken into consideration when utilized for other problems.