

Information on How to Use the Java Applet

Information on how to access and run the applet:

- The applet is at <http://math.pepperdine.edu/~dstrong/Java/IterativeMethods> (click on the “The Applet” link).
- The Java Plug-in (version 1.4 or higher) is required to use the applet. If you don’t have this plug-in, visit <http://www.java.com/en/download> and you should automatically get it (just follow the prompts/steps).
- The applet is for working with a 2 x 2 system of equations, to be solved using the Jacobi, Gauss-Seidel, and/or SOR Methods.

Information on using the applet to do iterative methods:

- Enter the values for the matrix A , the vector \mathbf{b} , and the initial guess $\mathbf{x}^{(0)}$.
- Under *Methods to use*, click the *Jacobi*, *Gauss-Seidel* and/or *SOR* boxes to use the desired iterative method(s). If you select the *SOR* box, you should also select a value for ω .
- To iterate the selected method(s), under *Do iteration using*, click the *Initial guess* button to do the first iteration using $\mathbf{x}^{(0)}$, and then click the *Current approximation* button to do subsequent iterations using the most recent approximation from each selected method.
- The applet’s table of data will give you the current approximation $\mathbf{x}^{(k)}$, the current error $\mathbf{x}^{true} - \mathbf{x}^{(k)}$, and the norm of the current error $\|\mathbf{error}^{(k)}\|$.
- The applet is designed to be very robust. However, like any software or other technology, it is not completely fail proof. For example, working with extremely small or large numbers could result in inaccurate results.