Some Basic OpenMP Coding for Parallelism

The Main Question for Math 4610 at USU

- Implement the serial version of Jacobi iteration for solving linear systems of equations of the form

  $$A\mathbf{x} = \mathbf{b}$$

  where A is a given $n \times n$ matrix and $\mathbf{b}$ is a vector with n components.

- To test the code you have written, multiply the matrix into a vector of ones to generate the right hand side of the system, $\mathbf{b}$, for the system of equations. Then solve the linear system of equations using Jacobi iteration. The solution should be a vector of ones - or close to it.

More efficiency, please.

- Using OpenMP directives, speed up the matrix-vector product needed at each iteration of Jacobi iteration. Note that the matrix-matrix routines you created in the last assignment can be used as a template for the product in your Jacobi iteration.