

1. Read Chapter 6 of the textbook.
2. Consult the MPI MPICH website in how to run MPI programs
<http://www-unix.mcs.anl.gov/mpi/mpich1/>
3. Write an MPI Greeting program. In this program, process x sends a greeting message to process $(x + 1) \% p$, where p is the number of processes. Once a process receives a message, it prints the message out. Use at least four processors to run your program.
4. Write a dense matrix transpose program. Assume that a dense $n \times n$ matrix A is stored on process 0. Send each column of A to process 1, but have process 1 receive each column into a row. When the function returns, A should be stored on process 0 and A^T on process 1. Use two processors to run and verify your program for $n = 4$ and 8.

In order to run MPI programs on our machines, follow the procedure below:

1. put `/usr/local/mpi/bin` in your path
2. put `/usr/local/mpi/man` in your manpath
3. remove any `stty` command in `.cshrc`
4. copy `/usr/local/mpi/examples` to your home directory
5. `ssh-keygen -t rsa`
6. `cp ~/.ssh/id_rsa.pub ~/.ssh/authorized_keys`
7. `mpirun -np 2 cpi`
8. type "yes" the first time you connect to a new machine
9. rerun it