

CEE 618 – Scientific Parallel Computing: Homework #2

Name: _____

Due Friday, January 25, 2013

1. Probability Problems

(a) Provide your own answer to the Monty Hall problem.

(b) A wine box has 16 bottles, 5 of which contain spoiled wine. A sample of 7 bottles is randomly selected from the box. Find the probability that you don't selected any spoiled wines. Modify the code distributed in class for general use as much as you can to control all parameters in the main program. Prove that the analytic solution is 0.028846, and compare it with your computational result.

2. Calculate

$$S = \sum_{n=1}^N n^3$$

where $N = 100$. Use a main code and a subroutine stored in separate files.

3. See "Mandatory Reading Assignment" on the course web site.
 - (a) Read carefully Chapter 1 & 2 of "Guide to FORTRAN 2003 Programming" for all details.
 - (b) Under "/cluster/mpiuser000/cee618s13" make "class02" directory (if you didn't).
 - (c) Go to "class02" (\$ cd class02) and make "practice" directory (\$ mkdir practice).
 - (d) Practice codes in specified pages (p. 27, 34–35, 53, 57, & 64).
 - (e) Note: Use FORTRAN compiler "**ifort**" (instead of f90 or f03) and the extension of FORTRAN codes "**.f90**" (instead of ".f03" as specified in the book), e.g.,
\$ ifort mycode01.f90