MAT 101 — Introduction to Computer Programming (C++)

Handout #14, March 24, 2005

Today's tasks:

1. Sorting an Array (selection sort (page 199–203)

2. Conceptually (p201)

3. Thinking about selection sort

   (a) The starting loop, loops over all the values except the last
   i = 0 to i < numused-1

   (b) The next loop finds the smallest value from j=i+1 to j < numused

   (c) When the smallest value is found, it is placed at index i in the array, while moving the element that was in that spot, into the array.

4. Classwork: Problem 3 on pages 217–218. Refer there for more information on this problem This program will compute the standard deviation for a group of numbers. First, write a function which computes the average of a partially filled array of doubles. Then, write a function which computes the sum of pow(array[i] - average,2.0) for every element of the array. Lastly, write the standard deviation function. It will call the average function (passing the array and numused, while returning the average). Then it will call the summation function (passing the array, numused, and the average while returning the sum). Lastly the standard deviation function will divide this sum by the numused. Then it will take the sqrt of this number and return it. Your function prototypes might look like this:
   double standard_deviation(double array[], int numused);
   double get_average(double array[],int numused);
   double sumsquared(double array[],int numused, double average);

5. Homework Due Tuesday March 29: See Handout #13 (hw6, hw6.cpp)