

7: Sorting

CSCI 2212 Fall 2015

1 Goals and Overview

- To use random numbers.
- To implement a sorting algorithm: either selection sort or insertion sort.
- To use file output.

This is a 2-part assignment. Program 7 prepares a list of randomly selected potential winners and sorts the list. Program 8, will read the file, ask a user to enter a student ID#, and award a prizes if the student's number is on the list of winners.

2 The Game.

Prizes. A wealthy donor has decided that students need all sorts of support resources, but they also need some fun. He has invented a game to encourage students to log onto the SuccessForAll website. When a student logs on, he or she can enter the weekly drawing for prizes. (The donor pays for all prizes.) On Friday each week, the site will run a lottery to award prizes to 10 of the registered students.

Program 7 prepares a list of randomly selected winners. Program 8, asks a user to enter a student ID# and awards a prize if the last 3 digits of the student ID# is on the list of winners.

Instructions Generate a file of potential winners for your giveaway program, as follows.

- Declare an array long enough for 50 potential winning numbers.
- Use a loop to fill the array with random numbers in the range 0 to 999 (to represent the last three digits of a student's ID number).
- It is OK if the random number generator produces the same random value twice.
- Sort the array. You may use insertion sort or selection sort. You may freely copy and adapt my code.
- Write the sorted numbers to a file, one per line.

10 prizes are available each week, to the first 10 students who register and whose ID is on the list of potential winners. Each student has a $1/20$ chance to be on the list of potential winners each week.