Due: 6/21 (11:59PM)

Bubble Sort and Binary Search:

- Let us develop a C++ program with the following requirements.

  1. The program first creates an array of 20 random positive numbers between 1 and 100. Make sure there are no duplicates in the array.
  2. Then apply *bubble sort* to sort the array in ascending order, then display the entire array.
  3. Now, ask user to enter any number between 1 and 100.
  4. Use *binary search* to check if the user's number is contained in the array. If so, display 'yes' with the index of the matching element. If not, display 'no'.
  5. Ask if the user wants to continue. If yes, return to Step 3. If no, terminate program.

What to submit:

- All source files (.cpp, .h) needed for compilation

How to submit:

- Use Canvas Assignment Submission menu to submit the assignment electronically at Canvas.
- Make sure to zip all your files into `hw1.zip`, then submit your `hw1.zip` as a single file.

Policy

- Make sure all your C++ programs properly compile and run on Eclipse C++.
- Projects will be graded 20% on style/standards and 80% on proper execution. Make sure to follow the coding standards posted on the course webpage.
- At the beginning of each file (.cpp, .h), provide comments specifying the author, date, and a brief description of the file.
- Each source file (.cpp, .h) must contain enough comments here and there to make it easy to follow your code. Insufficient comments could lead to loss of points.

- Non-compilable program will get almost no credit (e.g., executable code not produced due to compile errors).
- Non-working program will get almost no credit (e.g., the executable is terminated immaturely due to run-time errors).
- Copying other's code is strictly prohibited. If identical (or nearly identical) submissions are found among students, every student involved will get automatic zero for the assignment. The same goes for copying existing source code from the internet.