CS 162 Rubric(/55) **Name:**

HeapSort

Please submit a working C++ program that implements a heap as a contiguous list and then use heapsort on the list. Use a vector to store the list. However, do not use the built-in STL functions for a heap -- i.e., do not use make_heap( ), push_heap( ), pop_heap( ), or sort_heap( ). Demonstrate the following operations listed in the rubric below.

5 points – use of good programming practices (ie. Indents, comments, etc.)

10 points – program uses modularity in code

30 points – The program contains all components for the menu

- Fill a vector with 25 non-duplicated integers, in the range of 1 to 600. Use the *heaplist.txt* file, found in D2L, for the input values. (10 pts)
- Convert the unordered list into a heap using Nyhoff's *heapify* algorithm. (10 pts)
- Sort the heap with a heapsort. (10 pts)

10 points – Main method tests all parts appropriately