

# CS 140A - Homework 7

## Due Friday, December 5

Given the following numbers, 160, 8, 34, 110, 19, 212, 22, 55, 389, 48, 3, show the array at each pass or phase for each of the specified sorting techniques.

1. Insertion Sort
2. Selection Sort
3. Bubble Sort
4. Shell Sort using an increment sequence of  $h_k = N/2$  and  $h_{k+1} = h_k/2$
5. Radix Sort
6. Heap Sort
7. Merge Sort
8. Quick Sort using median-of-three partitioning
  
9. Which of the above sorting algorithms are stable?
  
10. The following problems you will be turning in code for electronically.
  - (a) Write a template function to implement Quick Sort.
  - (b) Write a template function to implement Heap Sort.

**NOTE:** you must turn in this original copy of your homework.