Assignment - 6
Sorting

No programming required. Show the trace using the style shown in the book.

1. Elementary sorts

a) Sort the sequence I, L, O, V, E, A, L, G, O, R, I, T, H, M, S using the following sort methods. Show the trace after each iteration of the outer loop. Also, compare the best, worst, and average case scenarios for these algorithms.
   a. Insertion sort
   b. Selection sort
   c. Bubble sort

b) Show in the style of the example discussed in class, how shell sorts the array E, A, S, Y, S, H, E, L, L, S, O, R, T, Q, U, E, S, T, I, O, N

2. Merge sorts

a) Give traces, in the style discussed in class, showing how the keys I, L, O, V, E, A, L, G, O, R, I, T, H, M, S are sorted for the following sorting mergesort algorithms:
   a. Top-down mergesort
   b. Bottom-up mergesort