Core Objectives for Lesson 5:

- familiarity with the pseudo-code for MergeSort

- familiarity with in-place merge algorithm

- familiarity with worst-case analysis of MergeSort

- familiarity with terminology concerning trees

- acquaintance with the theorem that says that repeatedly cutting input size n by a factor of some r, $0 < r < 1$ leads to an input size of 1 (or 0) in $O(\log n)$ steps -- familiarity with application of this toanalyze binary search algorithm

- acquaintance with the recursion-tree approach to analyzing MergeSort

- knowledge of the concept of a stable sorting algorithm; ability to demonstrate that some are stable and others are not