1. (Backtracking) Modify the subset sum code given in class to stop searching and backtrack when the goal sum is larger than the sum of all remaining integers in the set. Compare the running times of the original method and this new more efficient method for several inputs.

2. (Randomization and divide and conquer) Implement quicksort and randomized quicksort and compare their running times for arrays that are:
   a. In random order
   b. Already sorted

3. (Dynamic programming) Modify the edit distance program given in class to disallow substitutions. Under this new scheme, the distance from “UTEP” to “KTEP” would be two (delete “U”, insert “K”), while in the old scheme it’d be 1 (replace “U” by “K”).

   As usual, write a report describing your work, including the problem, your solution, and experimental results, as stated in the syllabus.