Final Programming Assignment

Due Dec 8th

Write a function Chain that takes two words, s and e of equal length as input, and populates an array Soln such that the first word in Soln is s, the last word is e, and each intermediate word differs from its predecessor by at most one character. You may use the printSoln function to print the Soln array once you have constructed it.
You only need to work with words of length three or four. The sample code contains arrays with three and four letter words, which you may use as intermediate words in your solution.

Chain('foo', 'bar') may produce
foo -> for -> far -> bar or
foo -> boo -> goo -> moo -> too -> tor -> tar -> bar

Similarly, Chain('love', 'ruby') may produce
love -> lobe -> robe -> rube -> ruby or
love -> rove -> robe -> lobe -> lube -> rube -> ruby

Your solution should not include duplicates words in the output chain.

Notes

• You may choose to use the rand() function which returns a real number, chosen uniformly at random, in the half-open interval [0, 1). You could multiply the return of rand() by an array length, convert the product to an integer, to pick an element in the array uniformly at random.
  
  For example, to pick a random element r in array A, you could write
  
  $r = A[(\text{rand()}*A\text{.length}).\text{to_int}]$ as long as A was non-nil.

Extra Credit

Optimize your solution such that it produces short chains. Explain why your solution is better than a naive implementation.