Solution

This assignment is mainly to implement a spell checker by using hash table. This project consists with two parts. One is the word list implemented by hash table. The other is the checker.

For the word list, I use one hash table whose size is 69997. The hash table has three basic functions: add, lookup, and remove.

For the add() function, firstly, I use the size() function in string library to get the length of the word and turn it into char* type. And using the hashCode() function provided in the material to insert into the hash table. While meeting the collision, I use double hash until the word can be insert into a slut.

For the lookup() function, I search the sluts in the whole table according to the hash code of that word.

The remove() function is similar to lookup() function, after finding it in the hash table, I will set the slut as NULL.

For the second part of the program, I just implement the following three checking functions:

CheckInsert: I will insert character from ‘a’ to ‘z’ into every slut of the target word. Then look up the new word in the hash table. If we can find it in the hash table then it is one of suggestions and we print it out.

CheckDelete: I just delete each character of the target word. Then look up the new word in the hash table. If we can find it in the hash table then print it out.

CheckReplace: I replace each character of the target word with character from ‘a’ to ‘z’. Then search it in the hash table.

Once I read one word in the input file, to begin with, I will search it in the hash table, if we can find it then it means that word is correct. Otherwise, I will do these three checking functions to that word and find out those suggested words.