CENG303-Design and Analysis Of Algotrihms Project Report

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This project checks the correctness of each word in the text entered by the user, and if the words are entered incorrectly, it is a program that makes suggestions to the user for each word.

In the project, the user can enter a single word or a text consisting of a maximum of 25 words. If text is entered, it checks each word in turn and makes suggestions for the wrong words, and the user can choose the word they want to write from among these suggestions.

The entered words are checked by comparing them with the English words in our dictionary.txt file.

In our dataset named Dictionary.txt, there are several words more than once. Therefore, sometimes suggested words may suggest more than one same word.

The user can only enter words with lowercase letters because in the program code we have defined our keyboard as lowercase letters only.

If the word entered by the user is in our dictionary, the program does not take any action. However, if the wrong word is entered, it compares this word with the words in the dictionary file and makes suggestions to the user for words with one letter error and words with two letter errors and only the wrong places of letters.

Suggested words are sorted according to the neighborhood degrees of the wrong letter in the word entered by the user on the keyboard. These degrees are defined as penalty points in our program. That is, the further the wrong letter is from the correct letter, the higher the penalty score.The letters in the word are correct, but in case of wrong placement of any two letters By swapping we find the right word and it only has 0.75 penalty points.

You can run the project by making 1 letter error in any word in the dictionary or by changing the place of 2 letters.

For example:

studebt→student

natilnao→national

incduding→including

apkle thew comr →apple,(they,then,them),come

Example Output of Project:

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run:
Enter a string for spell check: aplpe thew qell true
****************************************

aplpe is not valid!!!
Do you mean(SWAP): apple
The minimum number of operations required to convert the entered wrong word to the correct string(SWAP):2
Enter the word you want from the suggested words: apple

****************************************

thew is not valid!!!
Do you mean: they--->Penalty point:4
The minimum number of operations required to convert the entered wrong word to the correct string:1
Do you mean: then--->Penalty point:4
The minimum number of operations required to convert the entered wrong word to the correct string:1
Do you mean: them--->Penalty point:5
The minimum number of operations required to convert the entered wrong word to the correct string:1
Enter the word you want from the suggested words: then

****************************************

qell is not valid!!!
Do you mean: well--->Penalty point:1
The minimum number of operations required to convert the entered wrong word to the correct string:1
Do you mean: sell--->Penalty point:1
The minimum number of operations required to convert the entered wrong word to the correct string:1
Do you mean: cell--->Penalty point:2
The minimum number of operations required to convert the entered wrong word to the correct string:1
Do you mean: tell--->Penalty point:4
The minimum number of operations required to convert the entered wrong word to the correct string:1
Do you mean: bell--->Penalty point:4
The minimum number of operations required to convert the entered wrong word to the correct string:1
Do you mean: yell--->Penalty point:5
The minimum number of operations required to convert the entered wrong word to the correct string:1
Do you mean: hell--->Penalty point:5
The minimum number of operations required to convert the entered wrong word to the correct string:1
Enter the word you want from the suggested words: tell

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Sum of penalty points in the text entered: 8.75
BUILD SUCCESSFUL (total time: 27 seconds)
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