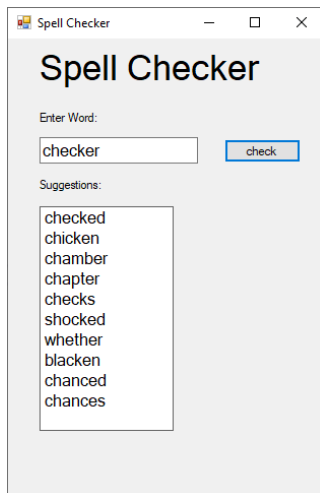


## CS340 Project 4 Spell Checker

This project is meant to simulate the spell checkers included in programs like Microsoft Word.



A spell checker gives options for the word that was intended based on a typed word. Your spell checker should use the dynamic programming Sequence Alignment algorithm that was discussed in class, with the following penalties:

Exact match = 0 (no penalty)

Consonant/Consonant or Vowel/Vowel mismatch = 1

Vowel/Consonant mismatch = 3

Gap = 2

In the example to the left, the given word is “checker,” and words with low penalty scores are listed under “Suggestions.”

A dictionary based on the words from the novel *Pride and Prejudice* has been provided to you. Your spell checker should execute the following steps:

1. For each word in the provided dictionary, calculate its minimum penalty score when compared to a given word.
2. Find the 10 words with the lowest scores and display them to the user.

Your program should use a GUI to collect the given word and display the suggestions. A user can type a word and then press a button to get suggestions, as is displayed above.

Your algorithm must run correctly and take  $O(nm)$  time where  $n$  and  $m$  are the lengths of the input strings or sequences.

The following rubric will be used:

Correctness of Sequence Alignment Algorithm	Algorithm gives incorrect results 0	Algorithm gives correct results 75	
Correctness of finding the 10 best suggestions	Algorithm gives incorrect results 0	Algorithm gives correct results 25	
GUI	No GUI 0	GUI doesn't work correctly or has errors 10	GUI works correctly 25