

Autocorrect Feature Project Documentation

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1 Objective

The primary objective is to develop a terminal-based application that suggests correct spellings for input words. It involves the use of trie for efficient word storage and retrieval, and the Damerau-Levenshtein distance algorithm for calculating the closest spelling suggestions. The application will also allow users to manage the underlying dictionary.

2 Prerequisites

Knowledge of programming languages suitable for trie implementation and string manipulation (e.g., Python). Understanding of trie data structures, Damerau-Levenshtein distance algorithm, and basic file I/O operations.

3 Specifications

3.1 Input Specifications

User input of potentially misspelled words and options to select or modify the dictionary.

3.2 Output Specifications

A list of suggested correct spellings for the input word and confirmation of dictionary modifications.

4 Rules and Guidelines

4.1 Rules

Only alphabetic input is accepted for word suggestions. Dictionary modifications must adhere to the format of the existing entries.

4.2 User Experience Guidelines

Provide clear instructions for word input and dictionary management. Ensure a user-friendly display of suggested spellings.

5 Code Structure

The application should include the implementation of the trie data structure, Damerau-Levenshtein distance algorithm, file I/O for dictionary management, and user interface for input and output.

6 Future Perspective

Potential enhancements include support for multiple languages, a graphical user interface, and real-time integration with text editors or email clients.

7 Resources

- Trie: <https://en.wikipedia.org/wiki/Trie>
- Damerau-Levenshtein Distance: https://en.wikipedia.org/wiki/Damerau%E2%80%93Levenshtein_distance
- Autocomplete (for reference): <https://en.wikipedia.org/wiki/Autocomplete>. Note: **The project is about autocorrect, but autocomplete concepts can provide useful insights.**
- Dictionary of Words: <https://github.com/dolph/dictionary>

8 Examples

```
my_word = "thr"
Did you mean {'the', 'thy', 'tar', 'thru', 'hr', 'thor', 'tur', 'thar', 'tor'} ?
```

```
my_word = "hellp"
Did you mean {'hell', 'helly', 'hello', 'help', 'hells'}?
```

```
my_words = "swpa"
Did you mean {'sapa', 'supa', 'swa', 'swap', 'spa'} ?
```

```
my_word = "project"
'project' is a valid word.
```

```
my_word = "coffet"
Did you mean {'coffee', 'coffret', 'coffer', 'cofea'} ?
```