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Project files & functions:

main.py:

1. essayLength(essay)
    - This function assesses the length of an essay based on the number of complex sentences it contains. It will then return feedback about the essay's length and a score ranging from 0 to 100, depending on the count of complex sentences.
2. misspelledWords(essay, initial_score):
    - This function checks for spelling errors in the essay. It uses a spell checker (imported from SpellChecker) to identify words that are not recognized as correctly spelled words. It will then return a list of misspelled words and adjust the score by deducting points for each misspelled word from the initial score provided.
3. checkGrammar(essay, initial_score):
    - This function checks for grammatical errors in the essay. It uses a grammar checking tool to find issues and lists them. It will then return details of the grammar issues found and recalculate the score by deducting points for each grammar issue from the initial score.
4. finalGrade(grades):
    - This function calculates the final grade of the essay. It averages the scores obtained from the length, spelling, and grammar function.
5. processEssay(essay_text):
    - This function conducts a comprehensive analysis of an essay by evaluating its length, spelling, and grammar. Initially, it assesses the essay's length by counting the number of complex sentences and provides feedback and a score (from 0 to 100) based on this count. Next, it checks for misspelled words, adjusts the score accordingly, and lists the misspelled words found. Following that, it evaluates the grammar of the essay, further adjusting the score based on identified grammar issues, and lists these issues. Finally, the function calculates the final score for the essay, categorizes the overall quality based on this score, and prints a detailed report of the analysis, including feedback on length, scores for complexity, spelling, grammar, and the final assessment.

Packages used:

- SpaCY
- SpellChecker
- language_tool_python