Problem

Engineers at QwickType Software found they spend so much time copying and pasting code that they decided to build their own text editor to speed up their development workflow. After implementing their editor they found it was even slower than what they had before. They have given you their current text processing logic and have tasked you with reimplementing or extending it **with a focus on performance**.

Running the starter code:

Golang: `go test -bench=. editor_test.go`

If you do not already have golang you can install it here: https://golang.org/dl/

Python: `python editor.py`

Deliverables

1. Any and all code, tests, or additional benchmarks you write.
2. A brief README that describes:
    a. Your high level approach to the problem.
    b. How to run your program (especially important if you used external dependencies).
    c. Any design decisions or tradeoffs you made (i.e. sacrificing performance of one operation to improve performance of another).
    d. Any extensions you have added or would like to add if you had more time.

We sincerely appreciate the time you put into this project. Have fun!

Considerations

1. You are welcome to implement your library in either of the two provided languages or any other language of your choice as long as it provides the functionality in the `TextEditor` interface.
2. Please avoid the use of third-party libraries. While we enjoy learning about new open source projects, we are most interested in your original technical work.
3. Note that this is a very open ended question. You could focus on data structure choices, tradeoffs between time and space for different operations, additional editor functionality, or anything else that interests you. We are not looking for any single answer or absolute performance numbers but are more interested in your process and evaluation methodology.