

Experiments:

- To measure the performance impact of the two string implementations, the times taken to insert a predetermined set of text when using a static length string implementation and a dynamic length string implementation were measured and compared.
- For the C implementation, the editor was invoked 10,000 times with 25 lines of approximately 200 characters inserted every time. Lines past line 9 were then removed from the buffer. These are the observed CPU time differences over 3 trials.

<Trial>: <Static Time>/<Dynamic Time>

1: 18.86s/19.12s

2: 18.98s/18.86s

3: 18.79s/20.68s

4: 19.33s/19.35s

5: 18.87s/18.90s

- To measure the memory impact of the two string implementations, a predetermined body of text was read into the editor. The RAM usage of the program was then measured using an IDE for both the static length string implementation and the dynamic length string implementation
- For the C implementation, a body of ~120,000 lines of text was loaded into both editors and the Xcode inspector was used to measure the corresponding RAM usage. For this test, a static string length of 1024 characters and an initial dynamic string length of 8 characters were used.

Static: 189.1MB

Dynamic: 41.2MB