

Due: Wednesday, May 24<sup>th</sup>, 11:59pm

Handin to cs40 p7

Filenames: editor.cpp, authors.csv

New concepts: STL strings, vectors, iterators.

For this assignment you will write a program that reads a source file, edits the file based on a second file containing commands, and then saves the resulting text to a third file. You will find my executable and test files in ~ssdavis/40/p7.

### 1. Files

- 1.1. The names of the three files are passed as command line arguments in the following order: source file name, command file name, and destination file name.
- 1.2. Source File
  - 1.2.1. Contains an unlimited amount of text with '\n' at the end of each line. Use the getline method described in the string chapter.
- 1.3. Command File
  - 1.3.1. Each line in the command file contains exactly one command.
  - 1.3.2. The command file is guaranteed to be error free. All line numbers will be that of existing lines.

### 2. Commands

- 2.1. There is exactly one space between each element in a command line.
- 2.2. {char}\* indicates a string of zero or more chars of any length, with spaces allowed.
- 2.3. Line numbers start at zero. The line number of specific text can change during the editing process because of line insertions and deletions.
- 2.4. Insert
  - 2.4.1. Syntax: I <line#> <position#> {char}\*
  - 2.4.2. Operation: inserts the char(s) in the line number specified, starting at the position specified.
- 2.5. Replace
  - 2.5.1. Syntax: R <line#> <start\_position#> <end\_position#> {char}\*
  - 2.5.2. Operation: replaces the char(s) in the line number specified, between the two positions, inclusive, with the string specified.
- 2.6. Find
  - 2.6.1. Syntax: F {char}\*
  - 2.6.2. Operation: Prints the string to screen and follows it with the line numbers of all lines that contain the specified string, each separated by a single space.
- 2.7. Delete line(s)
  - 2.7.1. Syntax: D <start\_line#> <end\_line#>
  - 2.7.2. Operation: Deletes the lines specified, inclusive. The text will need to move up to fill the resulting gap.
- 2.8. Erase word(s)
  - 2.8.1. Syntax: E {char}\*
  - 2.8.2. Operation: removes the specified string from the entire text. If this matches an entire line, then the entire line should be removed.
- 2.9. Copy and paste
  - 2.9.1. Syntax: C <<start\_line#> <end\_line#> <destination\_line#>
  - 2.9.2. Operation: Copies the specified lines and pastes them starting at the destination line number.
- 2.10. Move
  - 2.10.1. Syntax: M <start\_line#> <end\_line#> <destination\_line#>
  - 2.10.2. Operation: Cuts the specified lines and pastes them starting at the destination line number. The destination line number is based on the original vector before the lines are cut.

### 3. Further specifications:

- 3.1. The text must be stored in a vector of STL strings.
- 3.2. You may not #include<string.h> , <cstring>, nor <algorithm>.
- 3.3. You may not declare any arrays.
- 3.4. You may not use the [] operators of the vector and string classes, nor may you use the "at" method. You must use iterators instead. Hint: You can use a for loop to set the iterator to the correct position within the array.

```
[ssdavis@lect1 private]$ cat limerick.txt
A Limerick by Grady Tibboel
```

```
I've been studying all night and I'm tired,
But I can't sleep because I'm so wired.
So I'll play on the net
'Stead of going to bed,
And my tests will seem a quagmire.
```

```
[ssdavis@lect1 private]$ cat commands.txt
```

```
I 2 18 ECS 40
I 4 23 until dawn,
R 6 7 12 midterms
R 3 9 11 not
F I'
```

```
F y
F STL
```

```
D 1 1
```

```
D 3 4
```

```
E I'm
```

```
E A Limerick by Grady Tibboel
```

```
[ssdavis@lect1 private]$ p7.out limerick.txt commands.txt results.txt
```

```
I' 2 3 4
```

```
y 0 2 4 6
```

```
STL
```

```
[ssdavis@lect1 private]$ cat results.txt
```

```
I've been studying ECS 40 all night and tired,
```

```
But I cannot sleep because so wired.
```

```
And my midterms will seem a quagmire.
```

```
[ssdavis@lect1 private]$ cat commands2.txt
```

```
C 0 3 6
```

```
C 8 8 10
```

```
M 0 0 2
```

```
M 4 5 6
```

```
[ssdavis@lect1 private]$ p7.out limerick.txt commands2.txt results2.txt
```

```
[ssdavis@lect1 private]$ cat results2.txt
```

0	
1	A Limerick by Grady Tibboel
2	I've been studying all night and I'm tired,
3	But I can't sleep because I'm so wired.
4	So I'll play on the net
5	'Stead of going to bed,
6	A Limerick by Grady Tibboel
7	
8	I've been studying all night and I'm tired,
9	But I can't sleep because I'm so wired.
10	I've been studying all night and I'm tired,
11	And my tests will seem a quagmire.

```
[ssdavis@lect1 private]$
```