

# System Programming Homework 1

Muhammet Fikret ATAR

1801042693

## Requirement Check:

- a) ./hw1 '/str1/str2/' inputFilePath (DONE)
- b) ./hw1 '/str1/str2/i' inputFilePath (DONE)
- d) ./hw1 '/[zs]tr1/str2/' inputFilePath (DONE)
- e) ./hw1 '/^str1/str2/' inputFilePath (DONE)
- f) ./hw1 '/str1\$/str2/' inputFilePath (DONE)

Combinations of the above (DONE)

And finally i use file lock with fcntl, one process starts working after other one completes it's job.(DONE)

## How i solved this problem?

These are the steps that i applied:

- 1- Arguments are checked in main, if there is a problem program returns.
- 2- 2- If arguments are normal, i check the strings to see if we have multiple commands. I count the ; sign and hold how many commands we have.
- 3- I made changes on the buffer I got with the read command, I didn't use a temp file.
- 4- Parsed as ^ , \$ , i , [zs], str1 and str2.
- 5- The checked arguments were processed on the state machine.
- 6- Changes on the buffer are written back to the file, with the write call

## Design Decisions:

- I preferred to use dynamic memory for strings that may come in different lengths.

-I read the file line by line using lseek. This allowed me to move freely on the array.

-I sorted the processes in order of priority.

-I could not complete the c and g cases due to some errors in the design.

## Test;

1)

```
1 Strrr1 STR str22 str33
2 STR6 str6 strrr8 str5 str6
3 strrrr2
4 str5 str4 sTr3
5 str6 STR Str
6
7
```

```
atar@ubuntu: ~/Desktop
atar@ubuntu:~$ cd Desktop/
atar@ubuntu:~/Desktop$ make
gcc -Wall -o hw1 hw1.c
atar@ubuntu:~/Desktop$ ./hw1 '^str6/STR10/i' ./inputfile
```

```
1 Strrr1 STR str22 str33
2 STR10 STR10 strrr8 str5 STR10
3 strrrr2
4 str5 str4 sTr3
5 STR10 STR Str
6
```

2)

```
1 Strrr1 STR str22 str33
2 STR10 STR10 strrr8 str5 STR10
3 strrrr2
4 sTR33 Str4 str4 sTr33
5 STR10 STR Str
6
7 |
```

```
1 Strrr1 STR str22 STR99
2 STR10 STR10 strrr8 str5 STR10
3 strrrr2
4 STR99 Str4 str4 STR99
5 STR10 STR Str
6
```

```
atar@ubuntu:~/Desktop$ ./hw1 '/sTr33$/STR99/i' ./inputfile
```