

CSE 344 – SYSTEM PROGRAMMING

HW1 – FILE I/O

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- **Main function:**

System taking command arguments. When run the code there must 3 argument. (Like ./hw1 'strings' filepath) If argument numbers not equal to 3 code is going to give error and exit.

Then opening file which giving in the command. If there is an error when opening giving error and exit the code. After that creating a temporally file with mkstemp(). Then divide first command with semicolon ';' if there is exist in the string. This means there is multiple string change.

I am locking file for read and write. Because when a process making job the other process waiting its done.

After that calling Tokenize function. I am going to talk about later.

When string changes done. Closing giving file and reopening it for start at the begin and remove it's contain with O_TRUNC.

Changed file was wrote to temporally file and reading all them char by char and writing into file.

When changing process done unlock files and close them.

- **Tokenize Function**

This function divide string with slash '/' and taking first element as to be replaced string second one new string. If there is one more character this is for case insensitive 'i'.

First looking first string if contains "[*,^,\$" like this special characters if contains then return a value from 1 to 4. If not returning searching case sensitive.

[] => support multiple character

* => support zero or more repetitions of characters

^ => support matching at line starts

\$ => support matching at line ends

How did read and change?

Each function reading char by char from file. If character not matched with first character of changed string write it to temporally file. If character matched with first character of changed string then check it with other characters. If string is not match when first character found file cursor returning with lseek the next character which found first character and write first character into temporally file. If all character found then write 2. string to temporally file. When search done returning to main menu and writing temporally file contains to file.

If there is more replacement operation then main function doing same operations.

- **Sensitive function:**

Checking each character as case sensitive and found it replacing it.

- **insensitive function:**

- Checking each character as case insensitive and found it replacing it.

- **multipleMatch function:**

Checking each character as case sensitive. In this function when see the '[' looking characters in '['. e.g /Window[sz]/linux/ it is going to change find Windows or Windowz as linux.

- **lineStart function:**

Checking each character as case sensitive and found it checking string in the beginning of line. If string is beginning of the then change it.

- **lineEnd function:**

Checking each character as case sensitive and found it checking string in the ending of line. If string is ending of the then change it.

- **repetitionMatch function**

Checking each character as case sensitive. In this function when see the '*' looking character behind the '*'. e.g '/st*r1/str2' it is going to change find sr1 or str1 or stttr1 change it with str2.

What Did not I do?

I did not arbitrary combinations.