Branch: master ▾

Find file | Copy path

cs-35l / assignment5 / lab.txt

prithvikannan fixed tr2u and ran scripts to test

b281414 on Oct 31

1 contributor

Raw | Blame | History

107 lines (85 sloc) 4.3 KB

```
1. wrote tr2b.c
I learned that in C the input count is passed in as an int argc and the inputs
are passed in as a char pointer argv. First I checked the input values to make
sure they were correct by checking if exactly 3 operands were given and that the
from and to string were the same length.

Then I verified that there were no duplicate letters, and built my dictionary
between the letters to translate.

Next I used getChar() to read a character, and if I had a translation for that
letter, I would apply it and use putChar(). Otherwise, I would just use
putChar() and go to the next character.

To compile, I used: gcc -std=c11 tr2b.c -o tr2b

2. wrote tr2u.c
Similar to tr2b.c, I started with input checking and then moved to creating my
dictionary.

However, instead of using getChar() and putChar(), I used a temporary buffer of
size 1 and the read() command to take in a single character. Then I would check
if that character could be translated and translate if necessary and then output
using the write() command.

To compile, I used: gcc -std=c11 tr2u.c -o tr2u

3. testing

man head
    Looked at the documentation for head, which takes the first x bytes of a
    file when used with the --bytes flag.
head --bytes=5000000 /dev/urandom > tester.txt
    ran this script to create a random file of 5000000 bytes.

man strace
    Looked at the documentation of strace, realized that I needed to pass
    -c flag for easy counting.

strace -c ./tr2b 'A' 'B' < tester.txt > result_b.txt
strace -c ./tr2u 'A' 'B' < tester.txt > result_u.txt
    Ran strace on buffered and unbuffered tr commands on my test input file.
    I set from to 'A' and to to 'B' arbitrarily, and piped the outputs to files.

    tr2b:
    % time     seconds  usecs/call     calls    errors syscall
    ------ ----------- ----------- --------- --------- ----------------
    0.00    0.000000           0         2           read
    0.00    0.000000           0         1           write
    0.00    0.000000           0         2           open
    0.00    0.000000           0         2           close
    0.00    0.000000           0         4           fstat
    0.00    0.000000           0        10           mmap
    0.00    0.000000           0         3           mprotect
    0.00    0.000000           0         1           munmap
    0.00    0.000000           0         1           brk
    0.00    0.000000           0         1         1 access
    0.00    0.000000           0         1           execve
    0.00    0.000000           0         1           arch_prctl
    ------ ----------- ----------- --------- --------- ----------------
    100.00    0.000000                    29         1 total


    tr2u:
    % time     seconds  usecs/call     calls    errors syscall
    ------ ----------- ----------- --------- --------- ----------------
    56.25    0.484831           0   5000000           write
    43.75    0.377132           0   5000002           read
    0.00    0.000000           0         2           open
    0.00    0.000000           0         2           close
    0.00    0.000000           0         2           fstat
    0.00    0.000000           0         8           mmap
    0.00    0.000000           0         3           mprotect
    0.00    0.000000           0         1           munmap
    0.00    0.000000           0         1           brk
    0.00    0.000000           0         1         1 access
    0.00    0.000000           0         1           execve
    0.00    0.000000           0         1           arch_prctl
    ------ ----------- ----------- --------- --------- ----------------
    100.00    0.861963              10000024         1 total


strace -c ./tr2b 'A' 'B' < tester.txt
strace -c ./tr2u 'A' 'B' < tester.txt
    Ran strace on buffered and unbuffered tr commands on my test input file.
    I set from to 'A' and to to 'B' arbitrarily, and had it output to the
    terminal.

    I got 29 system calls for tr2b and 10000024 for tr2u, just as above.



4. timing the runs
time ./tr2b 'A' 'B' < tester.txt > result_b.txt
time ./tr2u 'A' 'B' < tester.txt > result_u.txt
    Use the time command to keep track of how long the process took to run tr
    buffered and unbuffered.

    tr2b:
    real    0m0.004s
    user    0m0.000s
    sys     0m0.002s

    tr2u:
    real    0m9.232s
    user    0m1.377s
    sys     0m7.813s

```