


Branch: master

Find fileCopy path

cs-35l / assignment1 / ans1.txt

 prithvikannan Add files via upload
3edbc0 on Oct 8

1 contributor

RawBlameHistory

292 lines (257 sloc) 9.68 KB

1Prithvi Kannan

2405110096

3Lab 5

4-----

5

61. man -K <command>

7

8COMMANDS:

9man man

10

112. mv is at /usr/local/cs/bin/mv and sh is at /usr/bin/sh.

12

13COMMANDS:

14which <command>

15

163. ./usr/local/cs/bin/pr - convert text files for printing

17./usr/local/cs/bin/tr - translate or delete characters

18

19COMMANDS:

20man find

21find . -executable -name "?r"

22

234. /usr/bin/emacs-24.3

24

25COMMANDS:

26cd /usr/bin/emacs

27readlink -f usr/bin/emacs

28

295. /usr/bin/gcc is version 4.8.5

30/usr/local/cs/bin/gcc is version 9.2.0

31

32COMMANDS:

33man gcc

34whereis gcc

35find -executable "gcc"

36/usr/bin/gcc --version

37/usr/local/cs/bin/gcc --version

38

396. u+sx is adding execute and set user ID on execution properties to the user group

40o-w removes write permission from the other users not in the file's group

41

42COMMANDS:

43man chmod

44

457. /usr/local/cs

46/usr/local/cs/src/bison

47/usr/local/cs/src/bison/RCS

48/usr/local/cs/src/gnuplot

49/usr/local/cs/src/gnuplot/RCS

50/usr/local/cs/src/coreutils

51/usr/local/cs/src/coreutils/RCS

```
52 /usr/local/cs/src/emacs
53 /usr/local/cs/src/emacs/RCS
54 /usr/local/cs/src/gdb
55 /usr/local/cs/src/gdb/RCS
56 /usr/local/cs/src/gprolog
57 /usr/local/cs/src/gprolog/RCS
58 /usr/local/cs/src/grep
59 /usr/local/cs/src/grep/RCS
60 /usr/local/cs/src/ocaml
61 /usr/local/cs/src/ocaml/RCS
62 /usr/local/cs/share/info
63 /usr/local/cs/share/man/man1
64 /usr/local/cs/share/man/man5
65 /usr/local/cs/share/man/man3
66 /usr/local/cs/bin
67 /usr/local/cs/bin/.del
68 /usr/local/cs/bison-3.4.2
69 /usr/local/cs/bison-3.4.2/share
70 /usr/local/cs/bison-3.4.2/share/locale
71 /usr/local/cs/bison-3.4.2/share/locale/bg
72 /usr/local/cs/bison-3.4.2/share/locale/bg/LC_MESSAGES
73 /usr/local/cs/bison-3.4.2/share/locale/ca
74 /usr/local/cs/bison-3.4.2/share/locale/ca/LC_MESSAGES
75 /usr/local/cs/bison-3.4.2/share/locale/da
76 /usr/local/cs/bison-3.4.2/share/locale/da/LC_MESSAGES
77 /usr/local/cs/bison-3.4.2/share/locale/de
78 /usr/local/cs/bison-3.4.2/share/locale/de/LC_MESSAGES
79 /usr/local/cs/bison-3.4.2/share/locale/el
80 /usr/local/cs/bison-3.4.2/share/locale/el/LC_MESSAGES
81 /usr/local/cs/bison-3.4.2/share/locale/eo
82 /usr/local/cs/bison-3.4.2/share/locale/eo/LC_MESSAGES
83 /usr/local/cs/bison-3.4.2/share/locale/es
84 /usr/local/cs/bison-3.4.2/share/locale/es/LC_MESSAGES
85 /usr/local/cs/bison-3.4.2/share/locale/et
86 /usr/local/cs/bison-3.4.2/share/locale/et/LC_MESSAGES
87 /usr/local/cs/bison-3.4.2/share/locale/fi
88 /usr/local/cs/bison-3.4.2/share/locale/fi/LC_MESSAGES
89 /usr/local/cs/bison-3.4.2/share/locale/fr
90 /usr/local/cs/bison-3.4.2/share/locale/fr/LC_MESSAGES
91 /usr/local/cs/bison-3.4.2/share/locale/ga
92 /usr/local/cs/bison-3.4.2/share/locale/ga/LC_MESSAGES
93 /usr/local/cs/bison-3.4.2/share/locale/hr
94 /usr/local/cs/bison-3.4.2/share/locale/hr/LC_MESSAGES
95 /usr/local/cs/bison-3.4.2/share/locale/id
96 /usr/local/cs/bison-3.4.2/share/locale/id/LC_MESSAGES
97 /usr/local/cs/bison-3.4.2/share/locale/it
98 /usr/local/cs/bison-3.4.2/share/locale/it/LC_MESSAGES
99 /usr/local/cs/bison-3.4.2/share/locale/ja
100 /usr/local/cs/bison-3.4.2/share/locale/ja/LC_MESSAGES
101 /usr/local/cs/bison-3.4.2/share/locale/ms
102 /usr/local/cs/bison-3.4.2/share/locale/ms/LC_MESSAGES
103 /usr/local/cs/bison-3.4.2/share/locale/nb
104 /usr/local/cs/bison-3.4.2/share/locale/nb/LC_MESSAGES
105 /usr/local/cs/bison-3.4.2/share/locale/nl
106 /usr/local/cs/bison-3.4.2/share/locale/nl/LC_MESSAGES
107 /usr/local/cs/bison-3.4.2/share/locale/pl
108 /usr/local/cs/bison-3.4.2/share/locale/pl/LC_MESSAGES
109 /usr/local/cs/bison-3.4.2/share/locale/pt
110 /usr/local/cs/bison-3.4.2/share/locale/pt/LC_MESSAGES
111 /usr/local/cs/bison-3.4.2/share/locale/pt_BR
112 /usr/local/cs/bison-3.4.2/share/locale/pt_BR/LC_MESSAGES
113 /usr/local/cs/bison-3.4.2/share/locale/ro
114 /usr/local/cs/bison-3.4.2/share/locale/ro/LC_MESSAGES
115 /usr/local/cs/bison-3.4.2/share/locale/ru
116 /usr/local/cs/bison-3.4.2/share/locale/ru/LC_MESSAGES
117 /usr/local/cs/bison-3.4.2/share/locale/sr
```

```
118 /usr/local/cs/bison-3.4.2/share/locale/sr/LC_MESSAGES
119 /usr/local/cs/bison-3.4.2/share/locale/sv
120 /usr/local/cs/bison-3.4.2/share/locale/sv/LC_MESSAGES
121 /usr/local/cs/bison-3.4.2/share/locale/tr
122 /usr/local/cs/bison-3.4.2/share/locale/tr/LC_MESSAGES
123 /usr/local/cs/bison-3.4.2/share/locale/uk
124 /usr/local/cs/bison-3.4.2/share/locale/uk/LC_MESSAGES
125 /usr/local/cs/bison-3.4.2/share/locale/vi
126 /usr/local/cs/bison-3.4.2/share/locale/vi/LC_MESSAGES
127 /usr/local/cs/bison-3.4.2/share/locale/zh_CN
128 /usr/local/cs/bison-3.4.2/share/locale/zh_CN/LC_MESSAGES
129 /usr/local/cs/bison-3.4.2/share/locale/zh_TW
130 /usr/local/cs/bison-3.4.2/share/locale/zh_TW/LC_MESSAGES
131 /usr/local/cs/bison-3.4.2/share/locale/ast
132 /usr/local/cs/bison-3.4.2/share/locale/ast/LC_MESSAGES
133 /usr/local/cs/bison-3.4.2/share/locale/gl
134 /usr/local/cs/bison-3.4.2/share/locale/gl/LC_MESSAGES
135 /usr/local/cs/bison-3.4.2/share/locale/hu
136 /usr/local/cs/bison-3.4.2/share/locale/hu/LC_MESSAGES
137 /usr/local/cs/bison-3.4.2/share/locale/ia
138 /usr/local/cs/bison-3.4.2/share/locale/ia/LC_MESSAGES
139 /usr/local/cs/bison-3.4.2/share/locale/ky
140 /usr/local/cs/bison-3.4.2/share/locale/ky/LC_MESSAGES
141 /usr/local/cs/bison-3.4.2/share/locale/lt
142 /usr/local/cs/bison-3.4.2/share/locale/lt/LC_MESSAGES
143 /usr/local/cs/bison-3.4.2/share/locale/lv
144 /usr/local/cs/bison-3.4.2/share/locale/lv/LC_MESSAGES
145 /usr/local/cs/bison-3.4.2/share/locale/sl
146 /usr/local/cs/bison-3.4.2/share/locale/sl/LC_MESSAGES
147 /usr/local/cs/bison-3.4.2/share/locale/sq
148 /usr/local/cs/bison-3.4.2/share/locale/sq/LC_MESSAGES
149 /usr/local/cs/bison-3.4.2/share/locale/th
150 /usr/local/cs/bison-3.4.2/share/locale/th/LC_MESSAGES
151 /usr/local/cs/bison-3.4.2/share/locale/af
152 /usr/local/cs/bison-3.4.2/share/locale/af/LC_MESSAGES
153 /usr/local/cs/bison-3.4.2/share/locale/be
154 /usr/local/cs/bison-3.4.2/share/locale/be/LC_MESSAGES
155 /usr/local/cs/bison-3.4.2/share/locale/cs
156 /usr/local/cs/bison-3.4.2/share/locale/cs/LC_MESSAGES
157 /usr/local/cs/bison-3.4.2/share/locale/eu
158 /usr/local/cs/bison-3.4.2/share/locale/eu/LC_MESSAGES
159 /usr/local/cs/bison-3.4.2/share/locale/ko
160 /usr/local/cs/bison-3.4.2/share/locale/ko/LC_MESSAGES
161 /usr/local/cs/bison-3.4.2/share/locale/rw
162 /usr/local/cs/bison-3.4.2/share/locale/rw/LC_MESSAGES
163 /usr/local/cs/bison-3.4.2/share/locale/sk
164 /usr/local/cs/bison-3.4.2/share/locale/sk/LC_MESSAGES
165 /usr/local/cs/bison-3.4.2/share/aclocal
166 /usr/local/cs/bison-3.4.2/share/doc
167 /usr/local/cs/bison-3.4.2/share/doc/bison
168 /usr/local/cs/bison-3.4.2/share/doc/bison/examples
169 /usr/local/cs/bison-3.4.2/share/doc/bison/examples/c++
170 /usr/local/cs/bison-3.4.2/share/doc/bison/examples/c++/calc++
171 /usr/local/cs/bison-3.4.2/share/doc/bison/examples/c
172 /usr/local/cs/bison-3.4.2/share/doc/bison/examples/c/calc
173 /usr/local/cs/bison-3.4.2/share/doc/bison/examples/c/lexcalc
174 /usr/local/cs/bison-3.4.2/share/doc/bison/examples/c/mfcalc
175 /usr/local/cs/bison-3.4.2/share/doc/bison/examples/c/reccalc
176 /usr/local/cs/bison-3.4.2/share/doc/bison/examples/c/rpcalc
177 /usr/local/cs/bison-3.4.2/share/doc/bison/examples/d
178 /usr/local/cs/bison-3.4.2/share/doc/bison/examples/java
179 /usr/local/cs/bison-3.4.2/share/bison
180 /usr/local/cs/bison-3.4.2/share/bison/m4sugar
181 /usr/local/cs/bison-3.4.2/share/bison/skeletons
182 /usr/local/cs/bison-3.4.2/share/bison/xslt
183 /usr/local/cs/bison-3.4.2/share/man
```

```
184 /usr/local/cs/bison-3.4.2/share/man/man1
185 /usr/local/cs/bison-3.4.2/share/info
186 /usr/local/cs/bison-3.4.2/bin
187 /usr/local/cs/bison-3.4.2/lib
188 /usr/local/cs/.del
189 /usr/local/cs/.del/bison-3.2.3
190 /usr/local/cs/gdb-8.3.1
191 /usr/local/cs/gdb-8.3.1/share
192 /usr/local/cs/gdb-8.3.1/share/info
193 /usr/local/cs/gdb-8.3.1/share/gdb
194 /usr/local/cs/gdb-8.3.1/share/gdb/python
195 /usr/local/cs/gdb-8.3.1/share/gdb/python/gdb
196 /usr/local/cs/gdb-8.3.1/share/gdb/python/gdb/command
197 /usr/local/cs/gdb-8.3.1/share/gdb/python/gdb/function
198 /usr/local/cs/gdb-8.3.1/share/gdb/python/gdb/printer
199 /usr/local/cs/gdb-8.3.1/share/gdb/syscalls
200 /usr/local/cs/gdb-8.3.1/share/gdb/system-gdbinit
201 /usr/local/cs/gdb-8.3.1/share/man
202 /usr/local/cs/gdb-8.3.1/share/man/man5
203 /usr/local/cs/gdb-8.3.1/share/man/man1
204 /usr/local/cs/gdb-8.3.1/include
205 /usr/local/cs/gdb-8.3.1/include/gdb
206 /usr/local/cs/gdb-8.3.1/lib
207 /usr/local/cs/gdb-8.3.1/bin
208 /usr/local/cs/ocaml-4.09.0
209 /usr/local/cs/ocaml-4.09.0/bin
210 /usr/local/cs/ocaml-4.09.0/lib
211 /usr/local/cs/ocaml-4.09.0/lib/ocaml
212 /usr/local/cs/ocaml-4.09.0/lib/ocaml/stublibs
213 /usr/local/cs/ocaml-4.09.0/lib/ocaml/compiler-libs
214 /usr/local/cs/ocaml-4.09.0/lib/ocaml/caml
215 /usr/local/cs/ocaml-4.09.0/lib/ocaml/threads
216 /usr/local/cs/ocaml-4.09.0/lib/ocaml/ocamldoc
217 /usr/local/cs/ocaml-4.09.0/man
218 /usr/local/cs/ocaml-4.09.0/man/man1
219 /usr/local/cs/ocaml-4.09.0/man/man3
220
221 COMMANDS:
222 man find
223 find . -type d -mtime -28
224
225 8. 292 links (on lnxsrv10)
226
227 COMMANDS:
228 man ls
229 man grep
230 man wc
231 ls -l | grep "\->" | wc -l
232
233 9. librom1394.so.0.3.0
234
235 COMMANDS:
236 man ls
237 ls -latr | head -10
238
239 10. The locale command gets its data from the environment variables. The man page says to look at
240 locale (7) and that gives us that locale data in the LOCPATH. Within the LOCPATH, the files are
241 at /usr/lib/locale.
242
243 COMMANDS:
244 man locale
245 man 7 locale
246
247 11. downcase-dwim
248 downcase-region
249 downcase-word
```

```
250
251     COMMANDS:
252     man emacs
253     emacs
254     C-h a downcase
255
256 12. C-M-r runs the command isearch-backward-regexp
257     C-M-s runs the command isearch-forward-regexp
258     C-M-t runs the command transpose-sexps
259     C-M-u runs the command backward-up-list
260     C-M-v runs the command scroll-other-window
261
262     COMMANDS:
263     man emacs
264     C-h k <command>
265
266 13. C-g runs the command keyboard-quit (found in global-map), which is an
267     interactive compiled Lisp function in 'simple.el'.
268     It is bound to C-g.
269
270     COMMANDS:
271     man emacs
272     C-h k C-g
273
274 14. yank is C-y. Reinsert ("paste") the last stretch of killed text
275
276     COMMANDS:
277     man emacs
278     C-h a yank Enter C-M-v
279
280
281 15. ls -l shows files in a long form with permissions and timestamps
282     dired shows all files, including those hidden with a dot, with permissions and timestamps (like ls -la)
283
284     COMMANDS:
285     man emacs
286     man ls
287     ls -l
288     emacs Enter C-h a dired C-x d
289
290
291
292
```

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Find file

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cs-35l / assignment1 / key1.txt

prithvikannan Add files via upload
3edbc0 on Oct 8

1 contributor

RawBlameHistory

70 lines (63 sloc) 3.36 KB

```
1 Prithvi Kannan
2 405110096
3 Lab 5
4 -----
5
6 exercise 1:
7 1. emacs exer1.html
8 2. C-s H T M L Enter
9 3. C-s s c a v e n g e r M-b
10 4. C-s s e l f - r e f e r e n t i a l M-b M-b
11 5. C-s a r r o w M-b
12 6. C-e
13 7. C-a
14 8. I didn't use the arrow keys
15 9. I didn't use the arrow keys
16 10. C-x C-c
17
18 exercise 2:
19 2. M-g g 19 C-k
20 3. C-s D E L E T E - M E D E L E T E - M E D E L E T E - M E Enter C-a C-w
21 4. C-s h t t p s : / / e n . w i k i p e d i a . o r g C-s C-a C-p C-@ C-n C-n C-e C-w
22 C-s <!-- Enter C-b C-b C-b C-b C-@ C-s --> Enter C-w
23 C-s <!-- Enter C-b C-b C-b C-b C-@ C-s --> Enter C-w
24 C-s <!-- Enter C-b C-b C-b C-b C-@ C-s --> Enter C-w
25
26 exercise 3:
27 2. M-% A s s i g n m e n t SP 1 Enter A s s i g n m e n t SP 4 2 Enter y y Enter
28 3. M-% U T F - 8 Enter U S - A S C I I Enter y
29 4. C-M-s [ ^ [ : a s c i i : ] ] C-a C-k
30 5. C-x [ C-s < / o l > Enter C-j
31
32 exercise 4:
33 3. C-x ] C-r <!-- C-@ C-s --> M-w C-s < / h t m l > C-r C-n C-y C-j
34 4. C-x ] C-r C-r C-r <!-- C-@ C-s --> M-w C-r s h o u l d SP o u t p u t C-r C-n C-y C-j
35 C-x ] C-r C-r C-r C-r <!-- C-@ C-s --> M-w C-r s h o u l d SP o u t p u t C-r Enter C-s g C-y
36 C-x ] C-r C-r C-r C-r C-r <!-- C-@ C-s --> M-w C-r s u b m i t C-r C-r C-r C-n C-y C-j
37 C-x ] C-r C-r C-r C-r C-r C-r <!-- C-@ C-s --> M-w C-r H o m e w o r k C-r C-n C-y C-j
38 C-x ] C-r C-r C-r C-r C-r C-r C-r <!-- C-@ C-s --> M-w C-r L a b o r a t o r y C-r C-n C-y C-j
39 5. C-x ] C-r - - - e x e r C-@ C-x ] C-w
40 6. C-x u
41 7. C-x ] C-r - - - e x e r C-@ C-x ] M-x comment-region
42 8. M-% < o l > Enter < o l > Enter y y y y y y //there were 7 occurrences
43
44 exercise 5:
45 1. emacs M-x m k d i r Enter j u n k Enter
46 2. C-x C-f j u n k / h e l l o . c Enter Right-click (to paste)
47 3. M-x c o m p i l e Enter C-a C-k g c c SP h e l l o . c Enter
48 4. C-x b h e l l o - o u t Enter C-u M-! . / a . o u t Enter
49 5. C-@ C-e M-w // the contents copied are EOF on input
50
51 exercise 6:
```


```
52 1. C-x b * s c r a t c h * Enter
53 2. ( r a n d o m SP " 4 0 5 - 1 1 0 - 0 9 6 " ) C-j
54 the result is -1273291771740444284
55 3. ( s e t q SP x SP ( r a n d o m ) )
56 x is -1310852660790842604
57 ( s e t q SP y SP ( r a n d o m ) )
58 y is 639295432029956439
59 4. (* SP x SP y) C-j
60 1872161401990567884 This number is mathematically incorrect since a negative times positive should give negative.
61 5. M-: (* SP x SP y) Enter
62 -1649107017113227460 (#o244351436370027127474, #x291d31e7c05caf3c) The number is the same but there are two more numbers that st
63 6. These are pseudo-random numbers, not real random numbers. Pseudo random numbers will always give the same result from a given se
64 true random numbers will not.
65 7. The situation under which the product will be mathematically is when it is greater than integer max or less than integer min. A
66 that the max value is  $2^{61}-1$  and the min is  $-2^{61}$ . Given an x value, the number of y values that would yield overflow is  $2^{61}-1$ 
67 can take on any value, we must sum over the set of x values. For simplicity, we will segment the set of x values by those greater
68 This yields 4 cases: ++, +-, -+, -- for the signs of x and y respectively. Therefore we have 4 * summation from  $x=0$  to  $x=2^{61}-1$  of
69 set of possibilities for x and y is  $(2^{62})^2$  which gives  $2^{124}$ . Therefore the probability is  $(4 * \text{summation from } x=0 \text{ to } x=2^{61}-1 \text{ of } x^2)$ 
70
```

Branch: master ▾

Find file

Copy path

cs-35l / assignment2 / buildwords




 prithvikannan added assign2
fc41ee5 on Oct 14

1 contributor

Raw

Blame

History

11 lines (10 sloc) 180 Bytes

1

#!/bin/bash

2

3

grep -E '<td>.+</td>' \$@ |

4

sed 's/<[^>]*>/g' |

5

tr [:upper:] [:lower:] |

6

sed "s/\\`/\\'/g" |

7

tr ',' '\\n' |

8

tr ' ' '\\n' |

9

sed "/[^pk/'mnwlhaeiou]/d" |

10

sed "/^\$/d" |

11

sort -u

Branch: master ▾

Find file

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[cs-35l](#) / [assignment2](#) / poornamesr

prithvikannan added the trailing slash

4d1b321 on Oct 15

[1 contributor](#)

Raw Blame History



65 lines (59 sloc) 1.42 KB

```
1  #!/bin/sh
2
3  # input checking
4  isRecursive=0
5  case $# in
6      0) D='.';;
7      1) if [ $1 = '-r' ]
8          then
9              D='.'
10             isRecursive=1
11         else
12             D=$1
13             isRecursive=0
14         fi;;
15      2) if [ $1 = '-r' ]
16          then
17              isRecursive=1
18         else
19             echo 'Your first operand is wrong' >&2
20             exit 1
21         fi
22      D=$2;;
23      *) echo 'You have given more than two operands' >&2
24         exit 1;;
25  esac
26  if [ ${D:0:1} == "-" ]
27  then
28      echo "Your operand starts with -" >&2
29      exit 1
30  elif [ ! -d $D ]
31  then
32      echo "Your operand is not a directory" >&2
33      exit 1
34  elif [ ! -r $D ]
35  then
36      echo "Your directory is not readable" >&2
37      exit 1
38  fi
39
40  # checking for poornames
41  reg="$reg([^\]{15,}[^\])*$)"
42  reg="$reg\^[^a-zA-Z\._\/-][^\]*$)"
43  reg="$reg\^[^\]*$"
44  reg="$reg\.[^\]+[^\]*$"
45  reg="$reg\.[^\]+$"
46
47  if [ $isRecursive = 1 ]
48  then
49      { find -H $D |
50      grep -E $reg & find -H $D |
51      sort -f | uniq -Di; } | sort -f | uniq -u | xargs -d '\n' ls -pd
```

```
52 { find -H $D |
53   grep -E $reg & find -H $D |
54   sort -f | uniq -Di; } | sort -f | uniq -d | xargs -d '\n' ls -pd
55 else
56 { find -H $D -maxdepth 1 |
57   grep -E $reg & find -H $D -maxdepth 1 |
58   sort -f | uniq -Di; } | sort -f | uniq -u | xargs -d '\n' ls -pd
59 { find -H $D -maxdepth 1 |
60   grep -E $reg & find -H $D -maxdepth 1 |
61   sort -f | uniq -Di; } | sort -f | uniq -d | xargs -d '\n' ls -pd
62 fi
63
64
65
```

Branch: master ▾

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[cs-35l](#) / [assignment2](#) / [lab2.log](#)

prithvikannan ran script again

d05e243 on Oct 14

[1 contributor](#)

Raw

Blame

History



107 lines (91 sloc) 4.51 KB

```
1 Laboratory:
2
3 export LC_ALL='C'
4     I started by running this command to get to the standard C locale
5
6 sort /usr/share/dict/words > words
7     This grabs the words file from the usr folder and makes a sorted version in
8     my current directory
9
10 wget https://web.cs.ucla.edu/classes/fall19/cs35l/assign/assign2.html
11     This command gets the html of the assign2 page
12
13 tr -c 'A-Za-z' '[\n*]' < assign2.html
14     This command takes everything that is not an alphabetical character (a-z
15     or A-Z) and replaces it with the new line character
16 tr -cs 'A-Za-z' '[\n*]' < assign2.html
17     This command does the same thing as above, but series of new line
18     characters are collapsed into one new line. This means that there are no
19     longer large spaces.
20 tr -cs 'A-Za-z' '[\n*]' < assign2.html | sort
21     This command orders the output of the above in alphabetical order.
22 tr -cs 'A-Za-z' '[\n*]' < assign2.html | sort -u
23     The -u flag means to sort unique, meaning each word will only show up once
24     even if it exists multiple times in the assign2 document
25 tr -cs 'A-Za-z' '[\n*]' < assign2.html | sort -u | comm - words
26     This command compares the unique sorted list of words to the words file.
27     The output is in three columns: column 1 is only in assign2.html, column 2
28     is those only in words, and column 3 is those in both
29 tr -cs 'A-Za-z' '[\n*]' < assign2.html | sort -u | comm -23 - words
30     This command uses the -23 flag of comm, which suppress column 2 and 3,
31     meaning it only displays the lines that are in assign2.html and not in the
32     words file
33
34 wget https://www.mauimapp.com/moolelo/hwnwdshw.htm
35     This command gets the html file for the hawaiian words
36
37 touch buildwords
38     I created a file called buildwords which I am going to use to hold my
39     script
40 grep -E '<td>.+</td>' $@
41     I use this grep command with extended regex to remove the <td> tags
42 sed 's/<[^>]*>//g'
43     I use the sed command to remove everything within html tags (< and >)
44 tr [:lower:] [:upper:]
45     Then I use tr to make everything lowercase, since we want our dictionary
46     to be only lowercase
47 sed "s/\`/\`/g"
48     Now I replace the grave accent with apostrophe. I needed to use the double
49     quotes since the single quote (apostrophe) is part of my string
50 tr ', '\n'| tr ' '\n'
51     This command splices words on the space and comma characters by adding in
```

```
52     the newline character
53 sed "/[^pk/'mnlhaeiou]/d"
54     This command removes all of non-hawaiian letters. As per the piazza post,
55     the way for us to tell that a word is hawaiian is if it only contains
56     hawaiian characters. Originally I tried to implement a system where I
57     removed alternate words, but the piazza post confirmed that this method
58     would not work for this file.
59 sed "/^$/d"
60     This removes the whitespaces introduced in the earlier steps
61 sort -u
62     This command alphabetizes the list of hawaiian words and removes duplicates
63     with the -u flag
64
65 cat hwnwdshw.htm | ./buildwords | less > hwords
66     I piped the output to a file hwords which will hold all of my hawaiian
67     words
68
69 tr [:upper:] [:lower:] <assign2.html | tr -cs "A-Za-z" '[\n*]' | sort -u |
70 comm -23 - hwords > hmisspelled
71     This command finds all of the maximal nonempty sequences of ASCII letters
72     or apostrophes and checks if they are not in the hawaiian dictionary
73
74 tr [:upper:] [:lower:] <assign2.html | tr -cs "A-Za-z" '[\n*]' | sort -u |
75 comm -23 - hwords | wc -w
76     The number of non hawaiian words is 554.
77
78 tr [:upper:] [:lower:] <assign2.html | tr -cs "A-Za-z" '[\n*]' | sort -u |
79 comm -23 - words > emispelled
80     This command does the same as above, but checks if they are not in the
81     english dictionary
82
83 tr [:upper:] [:lower:] <assign2.html | tr -cs "A-Za-z" '[\n*]' | sort -u |
84 comm -23 - words | wc -w
85     The number of non english words is 65.
86
87 comm emispelled hmisspelled
88     This command compares the words that are marked misspelled in english with
89     those misspelled in hawaiian
90
91 comm -13 emispelled hmisspelled
92     This command finds all of the words that are exclusively wrong by the
93     hawaiian checker
94     Two examples are: web and were
95
96 comm -13 emispelled hmisspelled | wc -w
97     This command counts the output of the above
98     There are 492 words exclusively misspelled in hawaiian
99
100 comm -23 emispelled hmisspelled
101     This command finds all of the words that are exclusively wrong by the
102     english checker
103     Two examples are: lau and wiki
104
105 comm -23 emispelled hmisspelled | wc -w
106     This command counts the output of the above
107     There are 3 words exclusively misspelled in english
```

Branch: master ▾

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cs-35l / assignment3 / hw3.txt



prithvikannan wrote shuf.py

c43f543 on Oct 18

1 contributor

Raw Blame History



58 lines (46 sloc) 2.4 KB

```
1 Prithvi Kannan
2 UID: 405110096
3
4 Q1: Does the patch improve the performance of ls or make it worse?
5
6 The patch removes an if statement "if (ignore_mode == IGNORE_DEFAULT)" in the
7 case 'A' section and replaces it with just the line
8 "ignore_mode = IGNORE_DOT_AND_DOTDOT". This is faster since the program no
9 longer has to check the value of ignore_mode.
10
11 Q2. If your company adopts this patched version of Coreutils instead of the
12 default one, what else should you watch out for? Might this new version of
13 Coreutils introduce other problems with your application?
14
15 The company should watch out for programs where the order of flags mattered. If
16 there were places where the ls -A -a was used instead of ls -a -A (since they
17 used to do the same thing), those will no longer do the same thing.
18
19 Q3. What happens when this script is invoked on an empty file like /dev/null,
20 and why?
21
22 I got the following error when I ran on /dev/null:
23 Traceback (most recent call last):
24 File "randline.py", line 70, in <module>
25     main()
26 File "randline.py", line 64, in main
27     sys.stdout.write(generator.chooseline())
28 File "randline.py", line 34, in chooseline
29     return random.choice(self.lines)
30 File "/usr/local/cs/Python-2.7.9/lib/python2.7/random.py", line 275, in choice
31     return seq[int(self.random() * len(seq))]
32     # raises IndexError if seq is empty
33 IndexError: list index out of range
34 This is because randline.py will try to print random lines from an empty file.
35 So the chooseLine function is trying to get the length of something that is
36 null.
37
38 Q4. What happens when this script is invoked with Python 3 rather than Python 2,
39 and why? (You can run Python 3 on the SEASnet hosts by using the command python3
40 instead of python.)
41
42 When I run with python3, I get the following syntax error:
43 File "randline.py", line 65
44     except IOError as (errno, strerror):
45         ^
46 SyntaxError: invalid syntax
47 This is because of a change in python3 syntax where it does not support
48 automatic tuple unpacking, therefore the line (errno, strerror) is invalid. This
49 post explains why this was removed: https://www.python.org/dev/peps/pep-3113/
50
51
```

```
52 Q5. What happens when your shuf.py script is invoked with Python 2 rather than
53 Python 3, and why?
54
55 Running shuf with python2 still works and gives the same behavior as python3
56 since python is backward compatible. This is to allow for new code to be written
57 in python3 and still run with older python 2 systems.
58
```

Branch: master ▾

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[cs-35l](#) / [assignment3](#) / [lab3.txt](#)

prithvikannan wrote shuf.py

c43f543 on Oct 18

[1 contributor](#)

Raw Blame History



68 lines (59 sloc) 1.7 KB

```
1 Prithvi Kannan
2 UID: 405110096
3
4 Laboratory:
5
6 1:
7 wget ftp://ftp.gnu.org/gnu/coreutils/coreutils-8.29.tar.xz
8 wget ftp://ftp.gnu.org/gnu/coreutils/coreutils-8.29.tar.xz.sig
9 wget https://ftp.gnu.org/gnu/gnu-keyring.gpg
10 gpg --verify --keyring ./gnu-keyring.gpg coreutils-8.29.tar.xz.sig
11 Here is the warning I get. This makes sense since I never indicated the
12 signature belongs to the owner.
13 gpg: WARNING: This key is not certified with a trusted signature!
14 gpg: There is no indication that the signature belongs to the owner.
15 Primary key fingerprint: 6C37 DC12 121A 5006 BC1D B804 DF6F D971 3060 37D9
16
17 2:
18 tar -xJvf coreutils-8.29.tar.xz
19 Unzip the files
20 mkdir ./install
21 Make directory to hold install
22 cd coreutils-8.29
23 Navigate into the coreutils directory
24 emacs INSTALL
25 Read instructions on how to install
26 ./configure --prefix=/u/ee/ugrad/prithvik/Documents/cs35l/assign3/install
27 Tell the system to install in my own install folder
28 make
29 make install
30
31 3:
32 cd install/bin
33 ./ls -a -A
34 ./ls -A -a
35
36 4:
37 cd ~/Documents/cs35l/assign3/coreutils-8.29
38 touch patch_file
39 emacs patch_file
40 paste in text from message 10 of bug 30963
41 man patch
42 patch -p1 < patch_file
43 emacs src/ls.c
44 C-x case 'A'
45
46 5:
47 make
48
49 6:
50 cd src
51 ./ls -a -A
```

```
52     Now the . and .. files don't get printed
53 ./ls -A -a
54     To make sure, I ran the original command and noticed that . and .. were
55     still being printed
56
57
58 Homework:
59 wget https://web.cs.ucla.edu/classes/fall19/cs35L/assign/randline.py
60 chmod +x randline.py
61 python randline.py /dev/null
62 emacs randline.py
63 python3 randline.py /dev/null
64 emacs randline.py
65 touch shuf.py
66 chmod +x shuf.py
67 emacs ~/Documents/cs35l/assign3/coreutils-8.29/src/shuf.c
68 emacs ~/Documents/cs35l/assign3/randline.py
```


Branch: master ▾

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cs-35l / assignment3 / shuf.py



prithvikannan fixed formatting

b96812a on Oct 21

1 contributor

Raw

Blame

History



124 lines (93 sloc) 3.5 KB

● Code navigation is available for this repository but data for this commit does not exist.

[Learn more](#) or [give us feedback](#)

```
1  #!/usr/bin/python
2
3  # Prithvi Kannan
4  # UID: 405110096
5
6  import random, sys, argparse, string
7
8  from optparse import OptionParser
9
10 class shuf:
11
12     def __init__(self, inputs, num_lines, isRepeat):
13         self.inputs = inputs
14         self.isRepeat = isRepeat
15         self.num_lines = num_lines
16
17         random.shuffle(self.inputs)
18
19     def shuffleline(self):
20         if not len(self.inputs):
21             return
22
23         if self.isRepeat:
24             while self.num_lines > 0:
25                 sys.stdout.write(random.choice(self.inputs))
26                 self.num_lines = self.num_lines - 1
27         else:
28             for i in range(0, self.num_lines):
29                 sys.stdout.write(self.inputs[i])
30
31
32 def main():
33     version_msg = "%prog 2.0"
34     usage_msg = """%prog [OPTION]... FILE
35 or: %prog -i LO-HI [OPTION]...
36 Write a random permutation of the input lines to standard output."""
37
38     parser = OptionParser(version=version_msg, usage=usage_msg)
39
40     parser.add_option("-n", "--head-count",
41                     action="store", dest="num_lines", default=sys.maxsize,
42                     help="output at most count lines")
43
44     parser.add_option("-i", "--input-range",
45                     action="store", dest="inputRange", default="",
46                     help="treat each number LO through HI as an input line")
47
48     parser.add_option("-r", "--repeat",
49                     action="store_true", dest="isRepeat", default=False,
50                     help="output lines can be repeated")
```

```
51
52 options, args = parser.parse_args(sys.argv[1:])
53
54 try:
55     num_lines = int(options.num_lines)
56 except:
57     parser.error("invalid count: {}".format(options.num_lines))
58 if num_lines < 0:
59     parser.error("negative count {}".format(num_lines))
60
61 isRepeat = options.isRepeat
62
63 inputRange = options.inputRange
64 if len(inputRange) > 0:
65     if len(args) != 0:
66         parser.error("extra operand '{}'.format(args[0]))
67
68     try:
69         isDash = inputRange.index('-')
70     except ValueError as e:
71         parser.error("invalid input range: '{}'.format(options.inputRange))
72     if isDash == 0:
73         parser.error("invalid input range: '{}'.format(options.inputRange))
74
75     first, last = inputRange.split("-")
76
77     try:
78         firstNum = int(first)
79     except ValueError as e:
80         parser.error("invalid input range: '{}'.format(options.inputRange))
81
82     try:
83         lastNum = int(last)
84     except ValueError as e:
85         parser.error("invalid input range: '{}'.format(options.inputRange))
86
87     if first > last:
88         parser.error("invalid input range: '{}'.format(options.inputRange))
89
90     inputs = list(range(firstNum, lastNum+1))
91     for i in range(len(inputs)):
92         inputs[i] = str(inputs[i]) + "\n"
93
94 else:
95     if len(args) == 0:
96         if (len(args) == 1 and args[0] == "-"):
97             inputs = sys.stdin.readlines()
98
99     elif len(args) == 1:
100         try:
101             f = open(args[0], 'r')
102             inputs = f.readlines()
103             f.close()
104         except IOError as e:
105             errno, strerror = e.args
106             parser.error("I/O error({}): {}".format(errno, strerror))
107
108     else:
109         parser.error("extra operand '{}'.format(args[1]))
110
111
112
113
114
115
116
```

```
117     if num_lines > len(inputs) and not isRepeat:
118         num_lines = len(inputs)
119
120     shuffler = shuf(inputs, num_lines, isRepeat)
121     shuffler.shuffleline()
122
123 if __name__ == "__main__":
124     main()
```

Branch: master ▾

Find file

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[cs-35l](#) / [assignment4](#) / [lab4.diff](#)

prithvikannan Create lab4.diff

b12abca on Oct 27

[1 contributor](#)

Raw

Blame

History



17 lines (14 sloc) 741 Bytes

```
1 2019-10-27 Prithvi Kannan <prithvik@lnxsrv03.seas.ucla.edu>
2
3      * timespec.h: Fixed the comparator for timespec_cmp by eliminating overflow
4      created by difference and replacing with comparison. First check if one is great          er then check if other is greater
5
6 --- timespec.h 2019-10-27 20:09:31.027982000 -0700
7 +++ timespec.h 2019-10-27 20:10:04.936131000 -0700
8 @@ -45,8 +45,7 @@
9      static inline int
10     timespec_cmp (struct timespec a, struct timespec b)
11     {
12 -   int diff = a.tv_sec - b.tv_sec;
13 -   return diff ? diff : a.tv_nsec - b.tv_nsec;
14 +   return (a.tv_sec > b.tv_sec) ? 1 : (a.tv_sec < b.tv_sec) ? -1 : a.tv_nsec - b.tv_nsec;
15     }
16
17     # if ! HAVE_DECL_NANOSLEEP
```

Branch: master ▾

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[cs-35l](#) / [assignment4](#) / [lab4.txt](#)

prithvikannan added to lab4 and fixed comment is sfrob

ffd6308 on Oct 28

[1 contributor](#)

Raw Blame History



87 lines (76 sloc) 3.38 KB

```
1 wget https://web.cs.ucla.edu/classes/fall19/cs35L/assign/
2 coreutils-with-bug.tar.gz
3     Download the bad version of coreutils
4 tar -xzf coreutils-with-bug.tar.gz
5     Unzip the files
6
7 mkdir ~/badCoreutils
8     Make a folder to install the bad coreutils version
9
10 ./coreutils-with-bug/configure --prefix=/u/ee/ugrad/prithvik/badCoreutils
11     install the bad coreutils in the folder we made
12
13 make
14 make install
15     Got this error message since futimens is being redeclared:
16     error: conflicting types for 'futimens'
17     int futimens (int, char const *, struct timespec const [2]);
18         ^
19
20 wget https://web.cs.ucla.edu/classes/fall19/cs35L/assign/coreutils.diff
21     Grab the patch to fix this issue
22
23 cd coreutils-with-bug
24     Navigate to coreutils directory
25 mv ../coreutils.diff .
26     Move the patch file from assign4 to the coreutils directory
27 patch --strip=0 < coreutils.diff OR patch -p0 < coreutils.diff
28     Apply the patch with the --strip flag to strip the smallest prefix with 0
29     leading slashes from each file name in the patchfile.
30 make
31     Tried to run make but it failed since I needed to run configure again
32 ./configure --prefix=/u/ee/ugrad/prithvik/badCoreutils
33     Ran configure again
34 make
35     Ran make with no bugs this time
36
37 cd ~/badCoreutils
38     Navigated to where I installed the coreutils
39 tmp=$(mktemp -d)
40 cd $tmp
41 touch -d '1918-11-11 11:00 GMT' wwi-armistice-cs35L
42 touch now
43 sleep 1
44 touch now1
45 TZ=UTC0 ~/badCoreutils/bin/ls -lt --full-time wwi-armistice-cs35L now now1
46     Followed the steps given in the lab to replicate the error using the
47     bad coreutils ls function.
48     The output is as follows:
49 -rw-r--r-- 1 prithvik eeugrad 0 1918-11-11 11:00:00.000000000 +0000 wwi-armistice-cs35L
50 -rw-r--r-- 1 prithvik eeugrad 0 2019-10-23 22:48:35.545821118 +0000 now1
51 -rw-r--r-- 1 prithvik eeugrad 0 2019-10-23 22:48:27.276526887 +0000 now
```

```
52
53 cd ~
54 mkdir tmp
55 cd tmp
56 touch -d '1918-11-11 11:00 GMT' wwi-armistice-cs35L
57 touch now
58 sleep 1
59 touch now1
60 TZ=UTC0 ls -lt --full-time wwi-armistice now now1
61     I attempted to reproduce the error using my home directory instead of the
62     $tmp directory. Using the same test case as above, I ran into a different
63     issue with ls. wwi-armistice shows up with a timestamp of 2054-12-17 even
64     though I ran the touch -d command with 1918-11-11. This is due to the epoch
65     time so everything dated before 1970 will wrap around.
66     The output is as follows:
67     -rw-r--r-- 1 prithvik eeugrad 0 2054-12-17 17:28:16.000000000 +0000 wwi-armistice-cs35L
68     -rw-r--r-- 1 prithvik eeugrad 0 2019-10-23 22:53:53.521649000 +0000 now1
69     -rw-r--r-- 1 prithvik eeugrad 0 2019-10-23 22:53:46.634002000 +0000 now
70
71 Using gdb, I traced the code and found that the error was in the timespec.h
72 file, specifically in the function timespec_cmp where there was overflow.
73
74 emacs timespec.h
75 C-x 4 a
76     Then I opened the timespec.h file and updated the changelog with the
77     modification with the following text:
78         Fixed the comparator for timespec_cmp by eliminating overflow
79         created by difference and replacing with comparison. First check if one is greater
80         then check if other is greater, and only if they are equal look at nanoseconds.
81     and replaced the lines:
82         int diff = a.tv_sec - b.tv_sec;
83         return diff ? diff : a.tv_nsec - b.tv_nsec;
84     with the line:
85         return (a.tv_sec > b.tv_sec) ? 1 : (a.tv_sec < b.tv_sec) ? -1 : a.tv_nsec - b.tv_nsec;
86
87
```

Branch: master ▾

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[cs-35l](#) / [assignment4](#) / [sfrob.c](#)

prithvikannan added to lab4 and fixed comment is sfrob

ffd6308 on Oct 28

[1 contributor](#)

Raw

Blame

History



170 lines (150 sloc) 4.21 KB

```
1  #include <stdbool.h>
2  #include <stdio.h>
3  #include <stdlib.h>
4
5  // implements comparison between a and b without deobfuscating
6  int frobcmp(char const *a, char const *b)
7  {
8      // make sure pointers are not null
9      if (a != 0 && b != 0)
10     {
11         // iterate through char array with pointers a and b
12         while (*a != ' ' && *b != ' ')
13         {
14             // unfrobnicate a single byte
15             char a_i = *a ^ 42;
16             char b_i = *b ^ 42;
17
18             // compare a and b and check which ends first
19             if (a_i < b_i || *a == ' ')
20             {
21                 return -1;
22             }
23             else if (a_i > b_i || *b == ' ')
24             {
25                 return 1;
26             }
27
28             a++;
29             b++;
30         }
31     }
32     // a and b always equal
33     return 0;
34 }
35
36 // custom comparator that calls frobcmp
37 int cmp(const void *a, const void *b)
38 {
39     return frobcmp(*(char **)a, *(char **)b);
40 }
41
42 int main()
43 {
44     char current_char;
45
46     // allocate memory for array of strings
47     char **arr = (char **)malloc(sizeof(char *));
48     // allocate memory for new string
49     char *temp_string = (char *)malloc(sizeof(char));
50     if (arr == NULL || temp_string == NULL)
51     {
```

```
52     fprintf(stderr, "Memory allocation error");
53     exit(1);
54 }
55
56 int string_ptr = 0;
57 int char_ptr = 0;
58 arr[0] = temp_string;
59 bool needNewString = false;
60
61 // increases size of string array to hold one more string
62 arr = (char **)realloc(arr, (string_ptr + 1) * sizeof(char *));
63 // creates the first string
64 temp_string = (char *)malloc(sizeof(char));
65 if (arr == NULL || temp_string == NULL)
66 {
67     fprintf(stderr, "Memory allocation error");
68     exit(1);
69 }
70
71 // read from stdin until eof or error
72 while (true)
73 {
74     // read text from standard input
75     current_char = getchar();
76     if (ferror(stdin))
77     {
78         fprintf(stderr, "Input read error");
79         exit(1);
80     }
81     else if (feof(stdin))
82     {
83         // hit end of file, exit while loop
84         break;
85     }
86
87     if (!needNewString)
88     {
89         temp_string = (char *)realloc(temp_string, (char_ptr + 1) * sizeof(char));
90         if (temp_string == NULL)
91         {
92             fprintf(stderr, "Memory allocation error");
93             exit(1);
94         }
95
96         // space is delimiter of new strings
97         if (current_char == ' ')
98         {
99             needNewString = true;
100         }
101     }
102     else // if program must create a new string
103     {
104         char_ptr = 0;
105
106         // handle consecutive spaces by skipping iteration
107         if (current_char == ' ' && char_ptr == 0)
108         {
109             continue;
110         };
111
112         string_ptr++;
113         needNewString = false;
114
115         arr = (char **)realloc(arr, (string_ptr + 1) * sizeof(char *));
116         temp_string = (char *)malloc(sizeof(char));
117         if (arr == NULL || temp_string == NULL)
```



```
118     {
119         fprintf(stderr, "Memory allocation error");
120         exit(1);
121     }
122
123 }
124
125 // add new char after adjusting pointers and allocating memory
126 temp_string[char_ptr] = current_char;
127 arr[string_ptr] = temp_string;
128 char_ptr++;
129 }
130
131 // add trailing space if not present
132 if (string_ptr != -1 && arr[string_ptr][char_ptr - 1] != ' ')
133 {
134     temp_string = (char *)realloc(temp_string, (char_ptr + 1) * sizeof(char));
135     if (temp_string == NULL)
136     {
137         fprintf(stderr, "Memory allocation error");
138         exit(1);
139     }
140     temp_string[char_ptr] = ' ';
141     arr[string_ptr] = temp_string;
142 }
143
144 qsort(arr, string_ptr + 1, sizeof(char *), cmp);
145
146 // print to stdout
147 int i;
148 for (i = 0; i < string_ptr + 1; i++)
149 {
150     int j = 0;
151     while (true)
152     {
153         if (putchar(arr[i][j]) == EOF)
154         {
155             fprintf(stderr, "Printing error");
156             exit(1);
157         }
158
159         // if space then move to next line
160         if (arr[i][j] == ' ')
161         {
162             break;
163         }
164         j++;
165     }
166     free(arr[i]);
167 }
168 free(arr);
169 exit(0);
170 }
```

Branch: master ▾

Find file

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[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 1. wrote tr2b.c
2 I learned that in C the input count is passed in as an int argc and the inputs
3 are passed in as a char pointer argv. First I checked the input values to make
4 sure they were correct by checking if exactly 3 operands were given and that the
5 from and to string were the same length.
6
7 Then I verified that there were no duplicate letters, and built my dictionary
8 between the letters to translate.
9
10 Next I used getChar() to read a character, and if I had a translation for that
11 letter, I would apply it and use putChar(). Otherwise, I would just use
12 putChar() and go to the next character.
13
14 To compile, I used: gcc -std=c11 tr2b.c -o tr2b
15
16 2. wrote tr2u.c
17 Similar to tr2b.c, I started with input checking and then moved to creating my
18 dictionary.
19
20 However, instead of using getChar() and putChar(), I used a temporary buffer of
21 size 1 and the read() command to take in a single character. Then I would check
22 if that character could be translated and translate if necessary and then output
23 using the write() command.
24
25 To compile, I used: gcc -std=c11 tr2u.c -o tr2u
26
27 3. testing
28
29 man head
30     Looked at the documentation for head, which takes the first x bytes of a
31     file when used with the --bytes flag.
32 head --bytes=5000000 /dev/urandom > tester.txt
33     ran this script to create a random file of 5000000 bytes.
34
35 man strace
36     Looked at the documentation of strace, realized that I needed to pass
37     -c flag for easy counting.
38
39 strace -c ./tr2b 'A' 'B' < tester.txt > result_b.txt
40 strace -c ./tr2u 'A' 'B' < tester.txt > result_u.txt
41     Ran strace on buffered and unbuffered tr commands on my test input file.
42     I set from to 'A' and to to 'B' arbitrarily, and piped the outputs to files.
43
44 tr2b:
45 % time      seconds  usecs/call   calls   errors syscall
46 -----
47 0.00      0.000000         0        2         read
48 0.00      0.000000         0        1         write
49 0.00      0.000000         0        2         open
50 0.00      0.000000         0        2         close
51 0.00      0.000000         0        4         fstat

```

```

52  0.00  0.000000      0    10      mmap
53  0.00  0.000000      0      3      mprotect
54  0.00  0.000000      0      1      munmap
55  0.00  0.000000      0      1      brk
56  0.00  0.000000      0      1      1 access
57  0.00  0.000000      0      1      execve
58  0.00  0.000000      0      1      arch_prctl
59  -----
60  100.00  0.000000                29      1 total

```

```

63  tr2u:
64  % time      seconds  usecs/call      calls      errors syscall
65  -----
66  56.25  0.484831          0  5000000          write
67  43.75  0.377132          0  5000002          read
68  0.00  0.000000          0      2          open
69  0.00  0.000000          0      2          close
70  0.00  0.000000          0      2          fstat
71  0.00  0.000000          0      8          mmap
72  0.00  0.000000          0      3          mprotect
73  0.00  0.000000          0      1          munmap
74  0.00  0.000000          0      1          brk
75  0.00  0.000000          0      1      1 access
76  0.00  0.000000          0      1          execve
77  0.00  0.000000          0      1          arch_prctl
78  -----
79  100.00  0.861963                10000024      1 total

```

```

82  strace -c ./tr2b 'A' 'B' < tester.txt
83  strace -c ./tr2u 'A' 'B' < tester.txt
84      Ran strace on buffered and unbuffered tr commands on my test input file.
85      I set from to 'A' and to to 'B' arbitrarily, and had it output to the
86      terminal.
87
88      I got 29 system calls for tr2b and 10000024 for tr2u, just as above.

```

4. timing the runs

```

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

```

```

98  tr2b:
99  real    0m0.004s
100 user    0m0.000s
101 sys     0m0.002s

```

```

103 tr2u:
104 real    0m9.232s
105 user    0m1.377s
106 sys     0m7.813s

```

Branch: master ▾

Find file

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[cs-35l](#) / [assignment5](#) / [report.txt](#)

prithvikannan added report

5053b6c on Nov 5

[1 contributor](#)

Raw

Blame

History



217 lines (185 sloc) 8.99 KB

```

1  1. wrote tr2b.c
2  I learned that in C the input count is passed in as an int argc and the inputs
3  are passed in as a char pointer argv. First I checked the input values to make
4  sure they were correct by checking if exactly 3 operands were given and that the
5  from and to string were the same length.
6
7  Then I verified that there were no duplicate letters, and built my dictionary
8  between the letters to translate.
9
10 Next I used getChar() to read a character, and if I had a translation for that
11 letter, I would apply it and use putChar(). Otherwise, I would just use
12 putChar() and go to the next character.
13
14 To compile, I used: gcc -std=c11 tr2b.c -o tr2b
15
16 2. wrote tr2u.c
17 Similar to tr2b.c, I started with input checking and then moved to creating my
18 dictionary.
19
20 However, instead of using getChar() and putChar(), I used a temporary buffer of
21 size 1 and the read() command to take in a single character. Then I would check
22 if that character could be translated and translate if necessary and then output
23 using the write() command.
24
25 To compile, I used: gcc -std=c11 tr2u.c -o tr2u
26
27 3. testing
28
29 man head
30     Looked at the documentation for head, which takes the first x bytes of a
31     file when used with the --bytes flag.
32     head --bytes=5000000 /dev/urandom > tester.txt
33     ran this script to create a random file of 5000000 bytes.
34
35 man strace
36     Looked at the documentation of strace, realized that I needed to pass
37     -c flag for easy counting.
38
39 strace -c ./tr2b 'A' 'B' < tester.txt > result_b.txt
40 strace -c ./tr2u 'A' 'B' < tester.txt > result_u.txt
41     Ran strace on buffered and unbuffered tr commands on my test input file.
42     I set from to 'A' and to to 'B' arbitrarily, and piped the outputs to files.
43
44 tr2b:
45 % time      seconds  usecs/call   calls   errors syscall
46 -----
47  0.00      0.000000         0        2         read
48  0.00      0.000000         0        1         write
49  0.00      0.000000         0        2         open
50  0.00      0.000000         0        2         close
51  0.00      0.000000         0        4         fstat

```

```

52  0.00  0.000000      0    10      mmap
53  0.00  0.000000      0     3      mprotect
54  0.00  0.000000      0     1      munmap
55  0.00  0.000000      0     1      brk
56  0.00  0.000000      0     1      1 access
57  0.00  0.000000      0     1      execve
58  0.00  0.000000      0     1      arch_prctl
59  -----
60  100.00  0.000000      29     1 total

```

```

63  tr2u:
64  % time      seconds  usecs/call      calls      errors syscall
65  -----
66  56.25    0.484831      0    5000000      write
67  43.75    0.377132      0    5000002      read
68  0.00     0.000000      0     2      open
69  0.00     0.000000      0     2      close
70  0.00     0.000000      0     2      fstat
71  0.00     0.000000      0     8      mmap
72  0.00     0.000000      0     3      mprotect
73  0.00     0.000000      0     1      munmap
74  0.00     0.000000      0     1      brk
75  0.00     0.000000      0     1      1 access
76  0.00     0.000000      0     1      execve
77  0.00     0.000000      0     1      arch_prctl
78  -----
79  100.00    0.861963      10000024    1 total

```

```
82  strace -c ./tr2b 'A' 'B' < tester.txt
```

```
83  strace -c ./tr2u 'A' 'B' < tester.txt
```

```
84      Ran strace on buffered and unbuffered tr commands on my test input file.
```

```
85      I set from to 'A' and to to 'B' arbitrarily, and had it output to the
86      terminal.
```

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

92 4. timing the runs

```
93  time ./tr2b 'A' 'B' < tester.txt > result_b.txt
```

```
94  time ./tr2u 'A' 'B' < tester.txt > result_u.txt
```

```
95      Use the time command to keep track of how long the process took to run tr
96      buffered and unbuffered.
```

```
98  tr2b:
```

```
99  real    0m0.004s
```

```
100 user    0m0.000s
```

```
101 sys     0m0.002s
```

```
103  tr2u:
```

```
104 real    0m9.232s
```

```
105 user    0m1.377s
```

```
106 sys     0m7.813s
```

109 ANALYSIS OF SFROB AND SFROBU

```
111  I created test files of various sizes using these commands
```

```
112      head --bytes=0 /dev/urandom > zero.txt
```

```
113      head --bytes=100 /dev/urandom > hundred.txt
```

```
114      head --bytes=10000 /dev/urandom > tenthousand.txt
```

```
116  I tested performance of sfrobu.
```

```
117  For sfrobu, I would estimate (0.03-0.003)/(10000-100)x + 0.003
```

```

118     time ./sfrobu < zero.txt
119         real    0m0.003s
120         user    0m0.001s
121         sys     0m0.002s
122     time ./sfrobu < hundred.txt
123         real    0m0.003s
124         user    0m0.002s
125         sys     0m0.002s
126     time ./sfrobu < tenthousand.txt
127         real    0m0.030s
128         user    0m0.012s
129         sys     0m0.016s
130
131 I tested performance of sfrob.
132 For sfrob, I would estimate  $(0.004 - 0.003) / (10000 - 100) \times 0.003$ 
133     time ./sfrob < zero.txt
134         real    0m0.003s
135         user    0m0.001s
136         sys     0m0.002s
137     time ./sfrob < hundred.txt
138         real    0m0.003s
139         user    0m0.003s
140         sys     0m0.001s
141     time ./sfrob < tenthousand.txt
142         real    0m0.004s
143         user    0m0.000s
144         sys     0m0.003s
145
146 The big O runtime of quicksort is  $O(n \log n)$ , so our function is going to have
147 similar runtime.
148
149 I ran strace to look at the system calls for different sized inputs to my sfrobu
150
151 strace -c ./sfrobu < zero.txt
152      % time   seconds  usecs/call   calls   errors syscall
153      -----
154      20.00    0.000010          3         3      mprotect
155      16.00    0.000008          2         4       fstat
156      16.00    0.000008          8         1      munmap
157      14.00    0.000007          2         4       brk
158      12.00    0.000006          2         3       read
159      12.00    0.000006          1         7      mmap
160      6.00     0.000003          3         1  arch_prctl
161      4.00     0.000002          1         2      close
162      0.00     0.000000          0         2      open
163      0.00     0.000000          0         1      1 access
164      0.00     0.000000          0         1      execve
165      -----
166      100.00    0.000050          29         1 total
167 strace -c ./sfrobu < hundred.txt
168      % time   seconds  usecs/call   calls   errors syscall
169      -----
170      0.00     0.000000          0          3       read
171      0.00     0.000000          0        101      write
172      0.00     0.000000          0          2      open
173      0.00     0.000000          0          2      close
174      0.00     0.000000          0          4       fstat
175      0.00     0.000000          0          7      mmap
176      0.00     0.000000          0          3  mprotect
177      0.00     0.000000          0          1      munmap
178      0.00     0.000000          0          4       brk
179      0.00     0.000000          0          1      1 access
180      0.00     0.000000          0          1      execve
181      0.00     0.000000          0          1  arch_prctl
182      -----
183      100.00    0.000000        130         1 total

```

```

184 strace -c ./sfrobu < tenthousand.txt
185 % time      seconds  usecs/call   calls   errors syscall
186 -----
187 99.96    0.037056         4    10000        write
188  0.04    0.000013         2         8        brk
189  0.00    0.000000         0         3        read
190  0.00    0.000000         0         2        open
191  0.00    0.000000         0         2        close
192  0.00    0.000000         0         4        fstat
193  0.00    0.000000         0         7        mmap
194  0.00    0.000000         0         3        mprotect
195  0.00    0.000000         0         1        munmap
196  0.00    0.000000         0         1    1 access
197  0.00    0.000000         0         1        execve
198  0.00    0.000000         0         1    arch_prctl
199 -----
200 100.00    0.037069        10033        1 total
201
202 The system calls for memory allocations are found by looking at the man page
203 for each of the syscalls from the stack trace.
204
205 man brk
206     brk - change data segment size
207     int brk(void *addr);
208 man mmap
209     mmap - map or unmap files or devices into memory
210     void *mmap(void *addr, size_t length, int prot, int flags,
211               int fd, off_t offset);
212 man munmap
213     munmap - map or unmap files or devices into memory
214     int munmap(void *addr, size_t length);
215
216 So brk is the equivalent of realloc, mmap is the equivalent of malloc, and
217 munmap is the equivalent of free.

```

Branch: master ▾

Find file

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[cs-35l](#) / [assignment5](#) / [sfrobu.c](#)

prithvikannan Update sfrobu.c

d8aec6b on Nov 6

1 contributor

Raw Blame History



286 lines (250 sloc) 6.18 KB

```
1  #include <unistd.h>
2  #include <stdbool.h>
3  #include <string.h>
4  #include <stdlib.h>
5  #include <sys/stat.h>
6  #include <ctype.h>
7  #include <stdio.h>
8
9  bool isF = false;
10
11 // implements comparison between a and b without deobfuscating
12 int frobcmp(char const *a, char const *b)
13 {
14     // make sure pointers are not null
15     if (a != 0 && b != 0)
16     {
17         // iterate through char array with pointers a and b
18         while (*a != ' ' && *b != ' ')
19         {
20             // unfrobnicate a single byte
21
22             char a_i;
23             char b_i;
24
25             if (isF)
26             {
27                 a_i = toupper((unsigned char)(*a ^ 42));
28                 b_i = toupper((unsigned char)(*b ^ 42));
29             }
30             else
31             {
32                 a_i = *a ^ 42;
33                 b_i = *b ^ 42;
34             }
35
36             // compare a and b and check which ends first
37             if (a_i < b_i || *a == ' ')
38             {
39                 return -1;
40             }
41             else if (a_i > b_i || *b == ' ')
42             {
43                 return 1;
44             }
45
46             a++;
47             b++;
48         }
49     }
50     // a and b always equal
51     return 0;
```



```
52 }
53
54 // custom comparator that calls frobcmp
55 int cmp(const void *a, const void *b)
56 {
57     return frobcmp(*(char **)a, *(char **)b);
58 }
59
60 int main(int argc, const char *argv[])
61 {
62     switch (argc)
63     {
64     case 1:
65         isF = false;
66         break;
67     case 2:
68         if (argv[1][0] != '-' && argv[1][1] != 'f')
69         {
70             fprintf(stderr, "Invalid arguments");
71             exit(1);
72         }
73         else
74         {
75             isF = true;
76         }
77         break;
78     default:
79         fprintf(stderr, "Invalid number of arguments");
80         exit(1);
81     }
82
83     struct stat buf;
84     fstat(0, &buf);
85     size_t size;
86     if (fstat(0, &buf) < 0)
87     {
88         fprintf(stderr, "Unable to get info");
89         exit(1);
90     }
91
92     char *regFile;
93     char **arr = NULL;
94     int s = -1;
95     bool addNewString = true;
96
97     if (S_ISREG(buf.st_mode))
98     {
99         size = buf.st_size;
100
101         regFile = (char *)malloc(sizeof(char) * (size + 1));
102         if (read(0, regFile, size) < 0)
103         {
104             fprintf(stderr, "Unable to read");
105             exit(1);
106         }
107
108         int words = 0;
109         int i = 0;
110
111         while (i < size)
112         {
113             // catch first char space
114             if (i == 0 && regFile[i] != ' ')
115             {
116                 words++;
117             }
118         }
119     }
```

```
118
119     if (regFile[i] == ' ')
120     {
121         // handle consecutive spaces by skipping iteration
122         while (regFile[i] == ' ' && i < size)
123         {
124             i++;
125         }
126         if (i < size)
127         {
128             words++;
129         }
130     }
131     i++;
132 }
133 regFile[size] = ' ';
134
135 // allocate memory equal to words
136 arr = (char **)malloc(sizeof(char *) * words);
137 if (arr == NULL)
138 {
139     fprintf(stderr, "Memory allocation error");
140     exit(1);
141 }
142
143 // add words to array
144 for (i = 0; i < size; i++)
145 {
146     if (addNewString && regFile[i] != ' ')
147     {
148         s++;
149         addNewString = false;
150         arr[s] = &regFile[i];
151     }
152     if (!addNewString && regFile[i] == ' ')
153     {
154         addNewString = true;
155     }
156 }
157 }
158 else
159 {
160     arr = (char **)malloc(sizeof(char *));
161     if (arr == NULL)
162     {
163         fprintf(stderr, "Memory allocation error");
164         exit(1);
165     }
166 }
167
168 char *temp_string;
169 char input[1];
170 char current_char;
171 int char_ptr = 0;
172 while (true)
173 {
174
175     int r = read(0, input, 1);
176     if (r == 0)
177     {
178         break;
179     }
180     else if (r < 0)
181     {
182         fprintf(stderr, "Unable to read");
183         exit(1);
```

```
184     }
185
186     current_char = input[0];
187
188     if (!addNewString)
189     {
190         temp_string = (char *)realloc(temp_string, (char_ptr + 1) * sizeof(char));
191         if (temp_string == NULL)
192         {
193             fprintf(stderr, "Memory allocation error");
194             exit(1);
195         }
196
197         // space is delimiter of new strings
198         if (current_char == ' ')
199         {
200             addNewString = true;
201         }
202     }
203
204     else // if program must create a new string
205     {
206         char_ptr = 0;
207
208         // handle consecutive spaces by skipping iteration
209         if (current_char == ' ' && char_ptr == 0)
210         {
211             continue;
212         };
213
214         s++;
215
216         arr = (char **)realloc(arr, (s + 1) * sizeof(char *));
217         temp_string = (char *)malloc(sizeof(char));
218         if (arr == NULL || temp_string == NULL)
219         {
220             fprintf(stderr, "Memory allocation error");
221             exit(1);
222         }
223         addNewString = false;
224     }
225
226     // add new char after adjusting pointers and allocating memory
227     temp_string[char_ptr] = current_char;
228     arr[s] = temp_string;
229     char_ptr++;
230 }
231
232 // add trailing space if not present
233 if (s != -1 && arr[s][char_ptr - 1] != ' ')
234 {
235
236     temp_string = (char *)realloc(temp_string, (char_ptr + 1) * sizeof(char));
237     if (temp_string == NULL)
238     {
239         fprintf(stderr, "Memory allocation error");
240         exit(1);
241     }
242     temp_string[char_ptr] = ' ';
243     arr[s] = temp_string;
244 }
245
246 // use qsort to sort array of strings
247 qsort(arr, s + 1, sizeof(char *), cmp);
248
249 // print to stdout
```

```
250     int i = 0;
251     while (i < s + 1)
252     {
253
254         int j = 0;
255         while (true)
256         {
257             input[0] = arr[i][j];
258             if (write(1, input, 1) < 0)
259             {
260                 fprintf(stderr, "Unable to write");
261                 exit(1);
262             }
263             // if space then move to next line
264             if (arr[i][j] == ' ')
265             {
266                 break;
267             }
268             j++;
269         }
270
271         if (!S_ISREG(buf.st_mode))
272         {
273             free(arr[i]);
274         }
275         i++;
276     }
277
278     if (S_ISREG(buf.st_mode))
279     {
280         free(regFile);
281     }
282
283     free(arr);
284
285     exit(0);
286 }
```

Branch: master ▾

Find file

Copy path

[cs-35l](#) / [assignment5](#) / [tr2b.c](#)

prithvikannan created assignment 5

c344ae4 on Oct 31

1 contributor

Raw Blame History



69 lines (61 sloc) 1.34 KB

```
1  #include <stdlib.h>
2  #include <stdio.h>
3  #include <string.h>
4
5  int main(int argc, const char *argv[])
6  {
7      if (argc != 3)
8      {
9          fprintf(stderr, "Invalid number of arguments");
10         exit(1);
11     }
12     const char *fromPtr = argv[1];
13     const char *toPtr = argv[2];
14
15     if (strlen(fromPtr) != strlen(toPtr))
16     {
17         fprintf(stderr, "Strings are different length");
18         exit(1);
19     }
20
21     char dict[256] = {'\0'};
22
23     int i;
24     for (i = 0; i < strlen(fromPtr); i++)
25     {
26         if (dict[fromPtr[i]] != '\0')
27         {
28             fprintf(stderr, "Found duplicate letter");
29             exit(1);
30         }
31         dict[fromPtr[i]] = toPtr[i];
32     }
33
34     while (!feof(stdin))
35     {
36         char c = getchar();
37
38         if (ferror(stdin))
39         {
40             fprintf(stderr, "Bad standard input");
41             exit(1);
42         }
43
44         if (c == EOF)
45         {
46             break;
47         }
48
49         if (dict[c] != '\0')
50         {
51             char output = dict[c];
```

```
52     putchar(output);
53     if (ferror(stdout))
54     {
55         fprintf(stderr, "Unable to write");
56         exit(1);
57     }
58 }
59 else
60 {
61     putchar(c);
62     if (ferror(stdout))
63     {
64         fprintf(stderr, "Unable to write");
65         exit(1);
66     }
67 }
68 }
69 }
```

Branch: master ▾

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[cs-35l](#) / [assignment5](#) / [tr2u.c](#)

prithvikannan fixed tr2u and ran scripts to test

b281414 on Oct 31

[1 contributor](#)

Raw Blame History



58 lines (52 sloc) 1.18 KB

```
1  #include <stdlib.h>
2  #include <stdio.h>
3  #include <unistd.h>
4  #include <string.h>
5
6  int main(int argc, const char *argv[])
7  {
8
9      if (argc != 3)
10     {
11         fprintf(stderr, "Invalid number of arguments");
12         exit(1);
13     }
14     const char *fromPtr = argv[1];
15     const char *toPtr = argv[2];
16
17     if (strlen(fromPtr) != strlen(toPtr))
18     {
19         fprintf(stderr, "Strings are different length");
20         exit(1);
21     }
22
23     char dict[256] = {'\0'};
24
25     int i;
26     for (i = 0; i < strlen(fromPtr); i++)
27     {
28         if (dict[fromPtr[i]] != '\0')
29         {
30             fprintf(stderr, "Found duplicate letter");
31             exit(1);
32         }
33         dict[fromPtr[i]] = toPtr[i];
34     }
35
36     char tempBuf[1];
37     char output[1];
38     while (read(0, tempBuf, 1) > 0)
39     {
40         if (dict[tempBuf[0]] != '\0')
41         {
42             output[0] = dict[tempBuf[0]];
43             if (write(1, output, 1) < 0)
44             {
45                 fprintf(stderr, "Unable to write");
46                 exit(1);
47             }
48         }
49         else
50         {
51             if (write(1, tempBuf, 1) < 0)
```


```
52         {  
53             fprintf(stderr, "Unable to write");  
54             exit(1);  
55         }  
56     }  
57 }  
58 }
```


Branch: master

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cs-35l / assignment6 / lab.txt

 prithvikannan fixed bug with make and created submission tarball
f2881d5 on Nov 7

1 contributor

RawBlameHistory

340 lines (330 sloc)14.2 KB

11. wget https://web.cs.ucla.edu/classes/fall19/cs35l/assign/simpgmp.c

Grab the simpgmp source code

gcc -lgmp simpgmp.c -o simpgmp

Compile simpgmp using the -lgmp flag

2. ./simpgmp 24

Outputs "16777216" which is 2**24

./simpgmp 16777216

Outputs an enormous file that ends with "884097536" which matches the question.

man cut

Discovered how to print only 10 characters

./simpgmp 16777216 | cut -c-10

Shows the first 10 characters are "1818585298"

man wc

Found the -m flag counts characters

./simpgmp 16777216 | wc -m

Outputs 5050446 meaning there are that many digits in the answer, which matches the question.

3. man ldd

Looked at documentation for ldd

ldd ./simpgmp

linux-vdso.so.1 => (0x00007ffd7cd91000)

libgmp.so.3 => /usr/lib64/libgmp.so.3 (0x00000037f5600000)

libc.so.6 => /lib64/libc.so.6 (0x00000037f4200000)

/lib64/ld-linux-x86-64.so.2 (0x000055e8293dc000)

4. man strace

Looked at documentation for strace

strace -c ./simpgmp 24

% 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	3		open
0.00	0.000000	0	3		close
0.00	0.000000	0	4		fstat
0.00	0.000000	0	11		mmap
0.00	0.000000	0	4		mprotect
0.00	0.000000	0	1		munmap
0.00	0.000000	0	3		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		35	1	total

5. ls /usr/bin | awk '(NR-405110096)%251 == 0'

autoconf

db43_recover

```
52     foomatic-configure
53     gsnd
54     jdb
55     libgnutls-extra-config
56     mysqltest
57     pbmtextps
58     pnmtpalm
59     reporter-mailx
60     sopranocmd
61     vino-passwd
62
63 6.  ldd /usr/bin/autoconf
64     not a dynamic executable
65 ldd /usr/bin/db43_recover
66     linux-vdso.so.1 => (0x00007fffd7adf000)
67     libdb-4.3.so => /lib64/libdb-4.3.so (0x0000003c72800000)
68     libpthread.so.0 => /lib64/libpthread.so.0 (0x0000003c72c00000)
69     libc.so.6 => /lib64/libc.so.6 (0x0000003c72400000)
70     /lib64/ld-linux-x86-64.so.2 (0x0000558c3579c000)
71 ldd /usr/bin/foomatic-configure
72     not a dynamic executable
73 ldd /usr/bin/gsnd
74     not a dynamic executable
75 ldd /usr/bin/jdb
76     linux-vdso.so.1 => (0x00007ffca8fe4000)
77     libpthread.so.0 => /lib64/libpthread.so.0 (0x0000003c72c00000)
78     libjli.so => not found
79     libdl.so.2 => /lib64/libdl.so.2 (0x0000003c73000000)
80     libc.so.6 => /lib64/libc.so.6 (0x0000003c72400000)
81     /lib64/ld-linux-x86-64.so.2 (0x000055a8c8480000)
82 ldd /usr/bin/libgnutls-extra-config
83     not a dynamic executable
84 ldd /usr/bin/mysqltest
85     linux-vdso.so.1 => (0x00007ffdbff28000)
86     libpthread.so.0 => /lib64/libpthread.so.0 (0x0000003c72c00000)
87     libmysqlclient_r.so.16 => /usr/lib64/mysql/libmysqlclient_r.so.16 (0x0000003829000000)
88     libcrypt.so.1 => /lib64/libcrypt.so.1 (0x0000003c81000000)
89     libnsl.so.1 => /lib64/libnsl.so.1 (0x0000003c81800000)
90     libssl.so.10 => /usr/lib64/libssl.so.10 (0x0000003829800000)
91     libcrypto.so.10 => /usr/lib64/libcrypto.so.10 (0x0000003829400000)
92     libz.so.1 => /lib64/libz.so.1 (0x0000003c73400000)
93     libstdc++.so.6 => /usr/lib64/libstdc++.so.6 (0x0000003c79400000)
94     libm.so.6 => /lib64/libm.so.6 (0x0000003c72800000)
95     libgcc_s.so.1 => /lib64/libgcc_s.so.1 (0x0000003c78c00000)
96     libc.so.6 => /lib64/libc.so.6 (0x0000003c72400000)
97     /lib64/ld-linux-x86-64.so.2 (0x00005598fc200000)
98     libfreebl3.so => /lib64/libfreebl3.so (0x0000003c80800000)
99     libgssapi_krb5.so.2 => /lib64/libgssapi_krb5.so.2 (0x0000003c7f400000)
100    libkrb5.so.3 => /lib64/libkrb5.so.3 (0x0000003c7e400000)
101    libcom_err.so.2 => /lib64/libcom_err.so.2 (0x0000003c7dc00000)
102    lib5crypto.so.3 => /lib64/lib5crypto.so.3 (0x0000003c7e800000)
103    libdl.so.2 => /lib64/libdl.so.2 (0x0000003c73000000)
104    libkrb5support.so.0 => /lib64/libkrb5support.so.0 (0x0000003c7e000000)
105    libkeyutils.so.1 => /lib64/libkeyutils.so.1 (0x0000003c7ec00000)
106    libresolv.so.2 => /lib64/libresolv.so.2 (0x0000003c74400000)
107    libselinux.so.1 => /lib64/libselinux.so.1 (0x0000003c74000000)
108 ldd /usr/bin/pbmtextps
109     linux-vdso.so.1 => (0x00007ffe827ca000)
110     libm.so.6 => /lib64/libm.so.6 (0x0000003c72800000)
111     libnetpbm.so.10 => /usr/lib64/libnetpbm.so.10 (0x0000003c72c00000)
112     libc.so.6 => /lib64/libc.so.6 (0x0000003c72400000)
113     /lib64/ld-linux-x86-64.so.2 (0x000055a0c7e91000)
114 ldd /usr/bin/pnmtpalm
115     linux-vdso.so.1 => (0x00007ffc36aa5000)
116     libnetpbm.so.10 => /usr/lib64/libnetpbm.so.10 (0x0000003c72c00000)
117     libm.so.6 => /lib64/libm.so.6 (0x0000003c72800000)
```

```
118     libc.so.6 => /lib64/libc.so.6 (0x0000003c72400000)
119     /lib64/ld-linux-x86-64.so.2 (0x00005d86f053000)
120 ldd /usr/bin/reporter-mailx
121     linux-vdso.so.1 => (0x00007ffe177cb000)
122     libreport.so.0 => /usr/lib64/libreport.so.0 (0x0000003c84800000)
123     libtar.so.1 => /usr/lib64/libtar.so.1 (0x0000003c83c00000)
124     libjson-c.so.2 => /lib64/libjson-c.so.2 (0x0000003c86200000)
125     libglib-2.0.so.0 => /lib64/libglib-2.0.so.0 (0x0000003c73c00000)
126     libaugeas.so.0 => /usr/lib64/libaugeas.so.0 (0x0000003c84c00000)
127     libsattr.so.3 => /usr/lib64/libsattr.so.3 (0x0000003c85a00000)
128     libc.so.6 => /lib64/libc.so.6 (0x0000003c72400000)
129     librt.so.1 => /lib64/librt.so.1 (0x0000003c73800000)
130     libfa.so.1 => /usr/lib64/libfa.so.1 (0x0000003c83400000)
131     libxml2.so.2 => /usr/lib64/libxml2.so.2 (0x0000003c7f000000)
132     libselinux.so.1 => /lib64/libselinux.so.1 (0x0000003c74000000)
133     libstdc++.so.6 => /usr/lib64/libstdc++.so.6 (0x0000003c79400000)
134     librpm.so.1 => /usr/lib64/librpm.so.1 (0x0000003c81800000)
135     libdl.so.2 => /lib64/libdl.so.2 (0x0000003c73000000)
136     libdw.so.1 => /usr/lib64/libdw.so.1 (0x0000003c82c00000)
137     libelf.so.1 => /usr/lib64/libelf.so.1 (0x0000003c79c00000)
138     libz.so.1 => /lib64/libz.so.1 (0x0000003c73400000)
139     /lib64/ld-linux-x86-64.so.2 (0x000055e50be84000)
140     libpthread.so.0 => /lib64/libpthread.so.0 (0x0000003c72c00000)
141     libm.so.6 => /lib64/libm.so.6 (0x0000003c72800000)
142     libgcc_s.so.1 => /lib64/libgcc_s.so.1 (0x0000003c78c00000)
143     librpmio.so.1 => /usr/lib64/librpmio.so.1 (0x0000003c80400000)
144     libnss3.so => /usr/lib64/libnss3.so (0x0000003c84000000)
145     libbz2.so.1 => /lib64/libbz2.so.1 (0x0000003c7fc00000)
146     liblzma.so.0 => /usr/lib64/liblzma.so.0 (0x0000003c80000000)
147     liblua-5.1.so => /usr/lib64/liblua-5.1.so (0x0000003c83000000)
148     libpopt.so.0 => /lib64/libpopt.so.0 (0x0000003c84400000)
149     libcap.so.2 => /lib64/libcap.so.2 (0x0000003c7cc00000)
150     libacl.so.1 => /lib64/libacl.so.1 (0x0000003c81c00000)
151     libdb-4.7.so => /lib64/libdb-4.7.so (0x0000003c7b800000)
152     libnssutil3.so => /usr/lib64/libnssutil3.so (0x0000003c83800000)
153     libplc4.so => /lib64/libplc4.so (0x0000003c82000000)
154     libplds4.so => /lib64/libplds4.so (0x0000003c82800000)
155     libnspr4.so => /lib64/libnspr4.so (0x0000003c82400000)
156     libattr.so.1 => /lib64/libattr.so.1 (0x0000003c81400000)
157 ldd /usr/bin/sopranocmd
158     linux-vdso.so.1 => (0x00007fff27178000)
159     libsopranoclient.so.1 => /usr/lib64/libsopranoclient.so.1 (0x0000003830e00000)
160     libQtCore.so.4 => /usr/lib64/libQtCore.so.4 (0x0000003c7a400000)
161     libpthread.so.0 => /lib64/libpthread.so.0 (0x0000003c72c00000)
162     libsoprano.so.4 => /usr/lib64/libsoprano.so.4 (0x0000003c8e600000)
163     libsopranoindex.so.1 => /usr/lib64/libsopranoindex.so.1 (0x0000003c75000000)
164     libQtNetwork.so.4 => /usr/lib64/libQtNetwork.so.4 (0x0000003829c00000)
165     libQtXml.so.4 => /usr/lib64/libQtXml.so.4 (0x0000003c79800000)
166     libQtDBus.so.4 => /usr/lib64/libQtDBus.so.4 (0x000000382a000000)
167     libclucene.so.0 => /usr/lib64/libclucene.so.0 (0x0000003c74c00000)
168     libstdc++.so.6 => /usr/lib64/libstdc++.so.6 (0x0000003c79400000)
169     libm.so.6 => /lib64/libm.so.6 (0x0000003c72800000)
170     libgcc_s.so.1 => /lib64/libgcc_s.so.1 (0x0000003c78c00000)
171     libc.so.6 => /lib64/libc.so.6 (0x0000003c72400000)
172     libz.so.1 => /lib64/libz.so.1 (0x0000003c73400000)
173     libdl.so.2 => /lib64/libdl.so.2 (0x0000003c73000000)
174     libgthread-2.0.so.0 => /lib64/libgthread-2.0.so.0 (0x0000003c74800000)
175     librt.so.1 => /lib64/librt.so.1 (0x0000003c73800000)
176     libglib-2.0.so.0 => /lib64/libglib-2.0.so.0 (0x0000003c73c00000)
177     /lib64/ld-linux-x86-64.so.2 (0x000055ad8c592000)
178     libssl.so.10 => /usr/lib64/libssl.so.10 (0x0000003829800000)
179     libcrypto.so.10 => /usr/lib64/libcrypto.so.10 (0x0000003829400000)
180     libdbus-1.so.3 => /lib64/libdbus-1.so.3 (0x0000003829000000)
181     libgssapi_krb5.so.2 => /lib64/libgssapi_krb5.so.2 (0x0000003c7f400000)
182     libkrb5.so.3 => /lib64/libkrb5.so.3 (0x0000003c7e400000)
183     libcom_err.so.2 => /lib64/libcom_err.so.2 (0x0000003c7dc00000)
```

```

184 libk5crypto.so.3 => /lib64/libk5crypto.so.3 (0x0000003c7e800000)
185 libkrb5support.so.0 => /lib64/libkrb5support.so.0 (0x0000003c7e000000)
186 libkeyutils.so.1 => /lib64/libkeyutils.so.1 (0x0000003c7ec00000)
187 libresolv.so.2 => /lib64/libresolv.so.2 (0x0000003c74400000)
188 libselinux.so.1 => /lib64/libselinux.so.1 (0x0000003c74000000)
189 ldd /usr/bin/vino-passwd
190 linux-vdso.so.1 => (0x00007ffc813f9000)
191 libgconf-2.so.4 => /usr/lib64/libgconf-2.so.4 (0x000000382a000000)
192 libgobject-2.0.so.0 => /lib64/libgobject-2.0.so.0 (0x0000003c74c00000)
193 libgnome-keyring.so.0 => /usr/lib64/libgnome-keyring.so.0 (0x000000382ac00000)
194 libglib-2.0.so.0 => /lib64/libglib-2.0.so.0 (0x0000003c73c00000)
195 libpthread.so.0 => /lib64/libpthread.so.0 (0x0000003c72c00000)
196 libc.so.6 => /lib64/libc.so.6 (0x0000003c72400000)
197 libgmodule-2.0.so.0 => /lib64/libgmodule-2.0.so.0 (0x0000003c79000000)
198 libORBit-2.so.0 => /usr/lib64/libORBit-2.so.0 (0x0000003c83000000)
199 libdbus-1.so.3 => /lib64/libdbus-1.so.3 (0x0000003829000000)
200 libgthread-2.0.so.0 => /lib64/libgthread-2.0.so.0 (0x0000003c74800000)
201 librt.so.1 => /lib64/librt.so.1 (0x0000003c73800000)
202 /lib64/ld-linux-x86-64.so.2 (0x000055dae8f03000)
203 libdl.so.2 => /lib64/libdl.so.2 (0x0000003c73000000)
204

```

The error message that shows up for autoconf is that "not a dynamic executable" which means that the loader for the executable is not available to the program.

```

205
206
207
208
209
210 7. for i in $(ls /usr/bin | awk 'NR%101==405110096%101')
211 do
212     ldd '/usr/bin/'$i
213 done |
214 grep o |
215 sed "s/=>.*//g" |
216 sed "s/([^(^)]*)//g" |
217 sort -u
218
219 /lib64/ld-linux-x86-64.so.2
220 libacl.so.1
221 libapr-1.so.0
222 libaprutil-1.so.0
223 libattr.so.1
224 libaudit.so.1
225 libaugeas.so.0
226 libavahi-client.so.3
227 libavahi-common.so.3
228 libblkid.so.1
229 libbz2.so.1
230 libcap-ng.so.0
231 libcap.so.2
232 libcolorprivate.so.2
233 libcolor.so.2
234 libcom_err.so.2
235 libcroco-0.6.so.3
236 libcrypto.so.10
237 libcrypt.so.1
238 libc.so.6
239 libdb-5.3.so
240 libdbus-1.so.3
241 libdevmapper.so.1.02
242 libdl.so.2
243 libdw.so.1
244 libelf.so.1
245 libexpat.so.1
246 libfa.so.1
247 libffi.so.6
248 libfreebl3.so
249 libgcc_s.so.1

```

```
250 libgcrypt.so.11
251 libgettextlib-0.19.8.1.so
252 libgettextsrc-0.19.8.1.so
253 libgio-2.0.so.0
254 libglib-2.0.so.0
255 libgmodule-2.0.so.0
256 libgobject-2.0.so.0
257 libgomp.so.1
258 libgpg-error.so.0
259 libgssapi_krb5.so.2
260 libgthread-2.0.so.0
261 libICE.so.6
262 libiodbc.so.2
263 libjson-c.so.2
264 libk5crypto.so.3
265 libkeyutils.so.1
266 libkrb5.so.3
267 libkrb5support.so.0
268 liblcms2.so.2
269 libldns.so.1
270 liblua-5.1.so
271 liblz4.so.1
272 liblzma.so.5
273 liblz02.so.2
274 libmagic.so.1
275 libmount.so.1
276 libm.so.6
277 libncurses.so.5
278 libncursesw.so.5
279 libnetpbm.so.11
280 libnl-3.so.200
281 libnl-cli-3.so.200
282 libnl-genl-3.so.200
283 libnl-idiag-3.so.200
284 libnl-nf-3.so.200
285 libnl-route-3.so.200
286 libnspr4.so
287 libnss3.so
288 libnssutil3.so
289 libpcap.so.1
290 libpcp.so.3
291 libpcre.so.1
292 libplc4.so
293 libplds4.so
294 libpopt.so.0
295 libprocps.so.4
296 libpthread.so.0
297 libQtCore.so.4
298 libQtXml.so.4
299 libreport.so.0
300 libresolv.so.2
301 librpmio.so.3
302 librpm.so.3
303 librt.so.1
304 libsasl2.so.3
305 libsattr.so.3
306 libsctp.so.1
307 libselinux.so.1
308 libsepol.so.1
309 libsmime3.so
310 libSM.so.6
311 libsnappy.so.1
312 libsqlite3.so.0
313 libssl3.so
314 libstdc++.so.6
315 libsvn_delta-1.so.0
```

```
316      libsvn_fs-1.so.0
317      libsvn_fs_base-1.so.0
318      libsvn_fs_fs-1.so.0
319      libsvn_fs_util-1.so.0
320      libsvn_repos-1.so.0
321      libsvn_subr-1.so.0
322      libsystemd.so.0
323      libtar.so.1
324      libtinfo.so.5
325      libudev.so.1
326      libunistring.so.0
327      libuuid.so.1
328      libX11.so.6
329      libXau.so.6
330      libXaw.so.7
331      libxcb.so.1
332      libXext.so.6
333      libxml2.so.2
334      libXmu.so.6
335      libXpm.so.4
336      libXt.so.6
337      libz.so.1
338      linux-vdso.so.1
339      not a dynamic executable
340
```

Branch: master ▼

Find file

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[cs-35l](#) / [assignment6](#) / [randmain.mk](#)**prithvikannan** Added prereqs to makefile

22bb374 now

[1 contributor](#)

Raw

Blame

History



12 lines (10 sloc) 467 Bytes

```
1 randmain: randmain.c randcpuid.c
2     $(CC) $(CFLAGS) -c randmain.c -o randmain.o
3     $(CC) $(CFLAGS) -c randcpuid.c -o randcpuid.o
4     $(CC) $(CFLAGS) -o randmain randmain.o randcpuid.o -ldl -Wl,-rpath=$(PWD)
5
6 randlibhw.so: randlibhw.c
7     $(CC) $(CFLAGS) -c -fPIC randlibhw.c -o randlibhw.o
8     $(CC) $(CFLAGS) -shared randlibhw.o -o randlibhw.so
9
10 randlibsw.so: randlibsw.c
11     $(CC) $(CFLAGS) -c -fPIC randlibsw.c -o randlibsw.o
12     $(CC) $(CFLAGS) -shared randlibsw.o -o randlibsw.so
```

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[cs-35l](#) / [assignment6](#) / [randmain.c](#)

prithvikannan Homework portion

c9d1e57 on Nov 7

[1 contributor](#)

Raw

Blame

History



148 lines (127 sloc) 3.7 KB

```
1  /* Generate N bytes of random output.  */
2
3  /* When generating output this program uses the x86-64 RDRAND
4     instruction if available to generate random numbers, falling back
5     on /dev/urandom and stdio otherwise.
6
7     This program is not portable.  Compile it with gcc -mrndrd for a
8     x86-64 machine.
9
10    Copyright 2015, 2017 Paul Eggert
11
12    This program is free software: you can redistribute it and/or
13    modify it under the terms of the GNU General Public License as
14    published by the Free Software Foundation, either version 3 of the
15    License, or (at your option) any later version.
16
17    This program is distributed in the hope that it will be useful, but
18    WITHOUT ANY WARRANTY; without even the implied warranty of
19    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU
20    General Public License for more details.
21
22    You should have received a copy of the GNU General Public License
23    along with this program.  If not, see <http://www.gnu.org/licenses/>.  */
24
25 #include "randcpuid.h"
26 #include <errno.h>
27 #include <stdbool.h>
28 #include <stdio.h>
29 #include <stdlib.h>
30 #include <dlfcn.h>
31
32 static bool
33 writebytes(unsigned long long x, int nbytes)
34 {
35     int ndigits = nbytes * 2;
36     do
37     {
38         if (putchar("0123456789abcdef"[x & 0xf]) < 0)
39             return false;
40         x >>= 4;
41         ndigits--;
42     } while (0 < ndigits);
43
44     return 0 <= putchar('\n');
45 }
46
47 /* Main program, which outputs N bytes of random data.  */
48 int main(int argc, char **argv)
49 {
50     /* Check arguments.  */
51     bool valid = false;
```



```
52 long long nbytes;
53 if (argc == 2)
54 {
55     char *endptr;
56     errno = 0;
57     nbytes = strtoll(argv[1], &endptr, 10);
58     if (errno)
59         perror(argv[1]);
60     else
61         valid = !*endptr && 0 <= nbytes;
62 }
63 if (!valid)
64 {
65     fprintf(stderr, "%s: usage: %s NBYTES\n", argv[0], argv[0]);
66     return 1;
67 }
68
69 /* If there's no work to do, don't worry about which library to use. */
70 if (nbytes == 0)
71     return 0;
72
73 /* Now that we know we have work to do, arrange to use the
74    appropriate library. */
75 void *library;
76 char *errorLoading;
77 unsigned long long (*rand64)(void);
78
79 if (rdrand_supported())
80 {
81     /* Hardware lib: randlibhw */
82     library = dlopen("randlibhw.so", RTLD_LAZY);
83     if (!library)
84     {
85         fprintf(stderr, "Error when opening dynamic library.\n");
86         return 1;
87     }
88
89     rand64 = dlsym(library, "rand64");
90     errorLoading = dlerror();
91     if (errorLoading != NULL)
92     {
93         fprintf(stderr, "Error when loading library.\n");
94         return 1;
95     }
96 }
97 else
98 {
99     /* Software lib: randlibsw */
100     library = dlopen("randlibsw.so", RTLD_LAZY);
101     if (!library)
102     {
103         fprintf(stderr, "Error when opening dynamic library.\n");
104         return 1;
105     }
106
107     rand64 = dlsym(library, "rand64");
108     errorLoading = dlerror();
109     if (errorLoading != NULL)
110     {
111         fprintf(stderr, "Error when loading library.\n");
112         return 1;
113     }
114 }
115
116 int wordsize = sizeof rand64();
117 int output_errno = 0;
```

```
118
119     do
120     {
121         unsigned long long x = rand64();
122         int outbytes = nbytes < wordsize ? nbytes : wordsize;
123         if (!writebytes(x, outbytes))
124         {
125             output_errno = errno;
126             break;
127         }
128         nbytes -= outbytes;
129     } while (0 < nbytes);
130
131     if (dlclose(library))
132     {
133         fprintf(stderr, "Error when closing dynamic library.\n");
134         return 1;
135     }
136
137     if (fclose(stdout) != 0)
138         output_errno = errno;
139
140     if (output_errno)
141     {
142         errno = output_errno;
143         perror("output");
144         return 1;
145     }
146
147     return 0;
148 }
```

Branch: master ▾

Find file

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[cs-35l](#) / [assignment6](#) / [randcpuid.c](#)

prithvikannan fixed bug with make and created submission tarball

f2881d5 on Nov 7

[1 contributor](#)

Raw

Blame

History



28 lines (25 sloc) 657 Bytes

```
1  #include "randcpuid.h"
2  #include <cpuid.h>
3
4  /* Description of the current CPU. */
5  struct cpuid
6  {
7      unsigned eax, ebx, ecx, edx;
8  };
9
10 /* Return information about the CPU. See <http://wiki.osdev.org/CPUID>. */
11 static struct cpuid
12 cpuid(unsigned int leaf, unsigned int subleaf)
13 {
14     struct cpuid result;
15     asm("cpuid"
16         : "=a"(result.eax), "=b"(result.ebx),
17           "=c"(result.ecx), "=d"(result.edx)
18         : "a"(leaf), "c"(subleaf));
19     return result;
20 }
21
22 /* Return true if the CPU supports the RDRAND instruction. */
23 extern _Bool
24 rdrand_supported(void)
25 {
26     struct cpuid extended = cpuid(1, 0);
27     return (extended.ecx & bit_RDRND) != 0;
28 }
```