

Index to the Handouts for Unix Operating System INFO1-CE9545

\ (\) \1 in **sed**, 9:7, 9:9
 \ (\) in regular expression, 7:12
 \$@, 10:6
 |, 1:1, 2:15–17, 2:20–21, 2:24, 3:19
 >, 1:11, 2:17–21, 3:18–19
 >>, 1:14, 2:18, 3:19
 \, 1:3, 2:12, 3:24, 8:5
 .., 1:9
 <, 2:20–21, 2:24, 3:19, 3:28
 ., 2:3
 *, 2:4
 #!, 3:17
 \$\$, 3:23
 (), 3:26
 =, 5:15
 +, 5:8
 --, 6:11, 7:6
 > after **done**, 4:15
 | after **done**, 4:16
 = for comparison in Korn shell language, 7:2
 {} in **awk**, 3:14
 , in **awk**, 3:27, 4:16
 != in **awk**, 4:17
 && in **awk**, 4:17
 <= in **awk**, 4:17
 == in **awk**, 4:17
 "" in **awk**, 4:17
 \$* in Bourne shell language, 7:5
 %[^ :] in C **scanf**, 7:14
 () in **egrep**, 7:11
 | in **egrep**, 7:11
 \$ in front of variable name, 4:3, 4:7
 & in HTML, 3:11
 ; in HTML, 3:11
 = in Korn shell language, 4:23
 -- in Korn shell language, 4:23, 7:9
 \$? in Korn shell language, 4:26, 5:1
 ++ in Korn shell language, 7:10
 . in regular expression, 1:3
 ^ in regular expression, 1:3, 1:8, 6:13, 6:8
 * in regular expression, 1:3, 1:8, 6:16
 \$ in regular expression, 1:3, 6:8
 ? in regular expression, 1:8
 [-] in regular expression, 1:8, 6:10, 6:15
 [^] in regular expression, 1:8, 6:13, 6:15
 - in regular expression, 6:10
 [] in regular expression, 6:10, 6:15
 \<\> in regular expression, 6:14
 \ in regular expression, 6:8
 \{\} in regular expression, 6:9
 ! in **sed**, 9:7
 . in shell language, 1:9
 * in shell language, 2:5, 3:15
 [] in shell language, 4:19
 ; in shell language, 4:19, 4:28
 != in shell language, 4:21
 < in shell language, 4:21
 > in shell language, 4:21
 = in shell language, 4:21, 4:3–4
 \$# in shell language, 4:22
 \$* in shell language, 4:22, 5:21
 << in shell language, 4:24
 && in shell language, 4:28
 || in shell language, 4:28
 {} in shell language, 4:9
 & in shell language, 6:6
 \$\$ in shell language, 7:4
 * in the shell language, 5:17
 - in **tr**, 2:17
 !! in **vi**, 6:3
 ! in **vi**, 6:4
 >> in **vi**, 6:4
 & in **vi** and **sed**, 8:5
 / (root directory), 1:4, 1:9
 < unnecessary, 3:21
 \$0 in **awk**, 4:16
 \$0 in shell language, 4:22
 %1, 6:6
 \$1 in **awk**, 3:14, 4:16
 \1 in regular expression, 7:12
 \$1 in shell language, 4:22
 100 Bottles of Beer on the Wall, 4:23
 1>&2, 5:5
 \2 in regular expression, 7:14
 2>&1 in the Korn shell language, 5:8
 abbreviations for previous Korn shell commands,
 2:11
 absolute pathname, 1:9

access_log, 1:7, 3:26
 account, 1:19
<ADDRESS> in HTML, 3:11
 addresses, 1:18
 AIX, 1:18
alias, 3:6
allgrades, 9:11
alpine, 2:24
 ampersand in HTML, 3:11
 ampersand in **vi** and **sed**, 8:5
 ancestry, 6:2
a.out, 3:15, 3:23
 Apache web server, 1:7
 Apple, 1:18
 Apple Safari, 3:7
a+r, 3:18
a-r, 3:18
archie, 6:7
 argument, 4:22
 arithmetic, 1:2, 2:21
arp, 3:27
a+rx, 3:17
 ASCII code, 2:17
 ASCII codes, 2:17
ascii, 2:1
 assignment statement, 4:3
at, 7:7
at -l, 7:7
at -r, 7:7
 AT&T, 1:18
 A/UX, 1:18
a+w, 3:18
a-w, 3:18
awk, 1:5–6, 2:1, 3:14, 4:16, 6:7
awk -F:, 3:21, 4:16
awk -F, 4:16
a+x, 3:18
a-x, 3:18
%[A-Za-z] in C **scanf**, 7:14
b, 1:2
 back quotes in shell language, 8:10
 background, 6:6
 backspace, 1:20
bash, 2:2
bc, 2:21, 4:26
bg, 6:6
 biggest files, 7:8
bin directory, 1:13, 3:15
/bin directory, 3:15–16
 binary, 3:15
<BODY> in HTML, 3:11
 Bonfire, 6:11
 Bourne Again shell, 2:2
 Bourne shell, 2:12, 2:2
**
** in HTML, 3:11
 break in HTML, 3:11
break in Korn shell language, 7:2
 browser, 3:7
 build your own version of **rm**, 7:3
 bystander, 8:5
 C, 2:22
 C++, 2:22, 4:5, 5:6
 C shell, 2:12, 2:2
 C Standard Library, 3:27, 11:2
cal, 1:2, 1:20, 6:12
cal, exit status of, 4:26
 calisthenics, 8:6
 caps lock key, 1:20
 Cartesian product, 4:9
cat, 1:14, 2:1, 2:23–24
cat -n, 5:15
cd, 1:11, 1:4, 1:9
cedilla in HTML, 3:11
 central mystery of Unix, 2:14
cgi-bin directory, 1:13
CHECKED in HTML, 7:21
chfn, 2:2
chmod, 1:11–12, 2:20, 3:17–18, 5:20
chmod a directory, 5:15
chmod a+rx, 3:17
 Christmas message, 5:11
chsh, 2:2
CIRCLE, 6:18
cleanup, 7:8
clear, 5:15–16
 client, 3:29
cmp, 2:12, 4:2, 12:4
 colon, 3:21
 color, 5:12
 columns, multiple, 4:1
comm -, 3:28
comm -12, 3:22
comm, 1:5–6, 3:22
comm -23, 3:24
 command line, 2:22
 command line argument, 2:22, 4:22
 comment, 3:16
 comment in HTML, 3:11
comment, 1:18
 compare strings, 4:21
 compare two files, 4:2
 compile, 3:15
 computer labs, 1:18
 Concurrent Versions System, 8:1
\$CONTENT_LENGTH, 7:22
 continuation character, 2:12, 3:24
 continuation line, 2:12, 3:24
continue in shell language, 7:6

control-b, 1:2, 2:11
control-c, 1:20, 2:21
control-d .br **control-d**, 2:21
control-f, 2:11
control-h, 1:20
control-p in Korn shell language, 2:11
control-q, 1:20
control-s, 1:20
control-u, 1:2
control-z, 1:20, 6:5
COORDS, 6:18
copy, 2:3
count, 7:9
cp, 1:14, 2:3
cs, 2:2
csplit, 6:7
current directory, 2:18
cut, 4:30
CVS, 8:1
d in **mail**, 2:25
dæmon, 3:18
data format, 12:1
date, 1:20
day, 5:24
dbx, 6:7
DEC, 1:18
decrypt, 4:2
DEFAULT, 6:18
DEFAULT_PIPE_SIZE, 2:16
delete, 1:20
delete a file, 2:5
delinquent, 3:24
/dev, 2:19
device, 2:19
/dev/null, 2:20, 3:18, 4:27, 7:2
df, 1:3, 3:27
Digital Equipment Corporation, 1:18
direct the standard input, 3:28
direct the standard output, 3:18
directory, 1:4
DirectoryIndex in web server, 3:7
DISPLAY, 3:6
divide a long statement, 2:12, 3:24
dmesg, 3:26
DNA, 4:1
doctor the data by hand, 3:19
DocumentRoot in web server, 3:7
dot, 2:3, 3:15
double character, 7:12
double quotes in shell language, 8:11
duplicates, 3:14, 5:9
.e in regular expression, 6:9
echo, 1:3, 7:9
ed, 6:7
egrep, 6:7, 7:11
elif in shell language, 4:20
else in shell language, 4:19
**** in HTML, 3:11
.emacs, 3:6
emacs, 3:6, 6:7
emacs mode shell, 2:11
email addresses, 1:18
emphasis in HTML, 3:11
encrypt, 4:13
env, 3:16
environ in Python, 4:7
environment, 3:16
environment variables, 2:3
-eq, 4:21
erase, 1:20
erase a file, 2:5
error, 5:5
error message, 4:20, 5:4–5
escape-. in Korn shell language, 2:12
/etc/group, 2:2
/etc/hosts, 5:14
/etc/motd, 2:1
/etc/passwd, 2:2
ex, 6:7
executable, 1:11, 3:15
execute permission, 1:10–11, 6:14
exit function in C, 4:27
exit in Python, 4:7
exit in shell language, 4:27
exit status, 4:26, 5:1, 5:4
exit status of pipeline, 5:1
Explorer, 3:7
export, 4:4
expr, 1:2, 6:7
-F in **awk**, 4:16
facetious, 6:17
failure, 4:26
false, when is **if**, 4:27
fg, 1:20, 6:6
fi in shell language, 4:19
fields in **awk**, 3:21
FIFOHIWAT, 2:16
FIFOLOWAT, 2:16
file, 1:4
filesystem, 1:5
find, 2:19, 3:16, 10:1
finger, 1:2, 3:6, 5:18
finite, 7:9
Firefox, 3:7
fold, 5:12
for, 4:8
for in Bourne shell language, 7:5
foreground, 6:6

forever, 7:8
 form, 3:7, 7:20
 format data, 12:1
 Fortran, 9:4
fortune, 1:3
 freeze, 2:21
 full pathname, 1:9, 3:15
 functions in C, 6:5
g/ in **vi**, 6:4
 games, 2:3
 gateway, 3:7
-ge, 4:21
geektools, 5:24
geometry, 3:6
 Gerrymander, 8:13
getenv in C++, 4:5
getenv in C, 4:5
getenv in Perl, 4:6
getenv in PHP, 4:7
getenv in Ruby, 4:7
getpid, 3:23
getppid, 3:23
 gif, 4:29
g+r, 3:18
g-r, 3:18
 grades, 9:10
grades, 1:13
grep --, 6:11
grep, 1:2, 2:2
grep, exit status of, 4:27
grep -h, 6:8
grep -i, 2:1
grep -n, 2:1
grep, origin of the word, 6:5
grep -v, 6:13
grep -w, 6:14
 group, 2:2
group, 2:2
-gt, 4:21
g+w, 3:18
g-w, 3:18
g+x, 3:18
g-x, 3:18
h as an abbreviation for **history**, 2:11
h in **mail**, 2:25
<H1> in HTML, 3:11
<H2> in HTML, 3:11
 Hamlet, 4:12
 hardware device, 2:19
head -10, 3:26
head, 1:6, 2:1
<HEAD> in HTML, 3:11
 Heisenberg Uncertainty Principle, 5:1
 HelpLine, 1:18
 Hewlett-Packard, 1:18
history, 2:11
 home directory, 1:4
\$HOME, 1:3, 3:16
 horizontal rule in HTML, 3:11
hosts file, 5:14
 HP-UX, 1:18
<HR> in HTML, 3:11, 7:21
 HTML, 3:11
<HTML> in HTML, 3:11
 http, 3:29
http, 1:18
 Hundred Bottles of Beer on the Wall, A, 4:23
 hyperlink, 3:7
 Hypertext Markup Language (HTML), 3:11
 IBM, 1:18
 IEEE, 1:18
if (a = b), 6:17
if in shell language, 4:19
 if, when is it true, 4:27
\$IFS, 9:11
 image, 4:29
 imagemap, 6:18
 imperative tense, 3:16
 indicative tense, 3:17
inetd, 6:2
 infinite loop, 4:29
 input, 2:14, 3:28, 4:24, 5:5
 input file, 2:21–22
<INPUT> in HTML, 7:21
 interesting things, 1:1
 Internet Explorer, 3:7
 interpret, 3:15
 IP address, 5:14
 Iraq, 6:13
 Irix, 1:18
isatty, 3:13
 ism, 6:10
ISMAP, 6:20
 Java, 5:5, 5:7
jobs, 6:6
 Kernighan, Brian, 2:22
 keyboard, 2:14, 5:5
 keyboard input, 2:21
 kill, 6:1
kill, 12:6
 Korn shell, 2:11–12, 2:2
ksh, 2:2, 6:2
ksh -t, 3:13
 largest files, 7:8
last, 3:26
 last word of the last command, 2:12
LC_TIME, 7:7
-le, 4:21

leaning, 4:9
less, 6:7
let in Korn shell language, 4:23, 7:10, 7:9
lex, 6:7
**** in HTML, 3:11
libc.so, 11:2
 library, 3:27, 11:2
 license plate, 6:11
 line numbers in **vi**, 3:2
 link, 2:4, 3:7
 Linux, 1:18
 Lisp, 3:6
 list in HTML, 3:11
ln, 2:4
locale, 7:7
 log out, 6:1
 login, 1:19
 login name, 1:19
.login, 2:12
\$LOGNAME, 1:3, 4:21
logout, 1:20
 loop, 4:8
lp, 1:15
lpq, 1:15, 3:27, 5:21, 7:2
lpr, 1:15, 7:2
lpstat, 1:15
ls, 1:5, 3:13
ls -a, 2:12
ls -l, 1:10
ls -t, 5:17
ls -s, 3:26
-lt, 4:21
lynx, 4:30
 mail, 2:24
mail, 2:23, 3:22, 3:6, 5:18
.mailrc, 3:6
mailto: in HTML, 3:11
mailx, 3:22
 main the data, 3:25
man, 1:2, 2:2, 6:7
 manual, 2:2
MAP, 6:18
 message of the day, 2:1
 Microsoft, 1:18
 Microsoft Internet Explorer, 3:7
 miscellaneous, 2:3
 Mister Bill, 7:11
mkdir, 1:12
~mm64/bin/moon, 3:15
mode.h, 9:11
moon, 3:15
more, 1:14, 1:2, 2:1, 2:24, 6:7
motd, 2:1
 move, 2:4
 Mozilla Firefox, 3:7
multi, 7:9
 multi-line argument, 9:2
 multiple columns, 4:1
mv --, 7:6
mv, 2:4, 5:22
-ne, 4:21
 nested loops, 4:9
netstat, 3:27, 4:17
 newline, 3:15
nice, 10:1
nm, 3:27, 11:2
nn, 6:7
no number in **vi**, 3:2
noclobber, 2:18
NR, 2:1
NR in **awk**, 4:16
nslookup, 4:16–17, 5:14, 5:23
null, 2:20, 3:18, 4:27, 7:2
number in **vi**, 3:2
 octal digits, 1:11
od, 8:12
**** in HTML, 3:11
 oldest files, 5:18, 7:8
open mode, 3:1
o+r, 3:18
o-r, 3:18
 Oracle, 1:18
 ordered list in HTML, 3:11
os.environ in Python, 4:7
 outline of part 1, 6:6
 output, 2:14, 3:18, 5:5
 output file, 2:21
o+w, 3:18
o-w, 3:18
o+x, 3:18
o-x, 3:18
-P, 1:15
-P argument of **lpr** and **lpq**, 7:2
<P> in HTML, 3:11
p in **mail**, 2:25
p in **vi**, 6:5
 page, 3:7
 palindrome, 7:14, 7:16
 parentheses, 3:26
 parentheses in **egrep**, 7:11
 parents and children, 6:1
 parents process ID number, 3:23
 party, 4:9
passwd, 1:3, 2:2
passwd -f, 2:2
passwd -s, 2:2
 password, 1:19, 1:3
\$PATH, 1:3, 3:15–16

pathname, 1:9
 Perl, 4:6, 5:14, 5:5, 5:7, 6:7, 7:16
 permission bits, 1:10
pg, 6:7
 phone numbers, 1:18
 photograph, 4:29
 PHP, 4:7, 5:7, 6:7
 PID number, 3:23
PID number, 6:1
 Pig Latin, 9:4
 pipe, 1:1, 2:15–17, 2:20
 pipeline, 1:5, 3:14
 pipeline, exit status of, 5:1
.plan, 3:6
 Polish corridor, 8:13
 POSIX, 1:18
 PPID number, 3:23
PPID number, 6:1
pr, 12:1
pr -ll -m -t -w80, 4:1
<PRE> in HTML, 3:11
 preformat in HTML, 3:11
 print homework, 3:18
print in **awk**, 3:14
printf, 3:23
 process, 6:1
 process ID number, 3:23
.profile, 2:12
.project, 3:6
 prompt, 1:20
 protocol, 3:29
ps, 2:15
\$PS1, 1:3
public_html directory, 1:13
pwd, 1:4, 1:8
 Python, 4:7
q, 1:2
q in **mail**, 2:25
 quotes in shell language, 8:10
 quotes, real purpose of, 4:3
r, 1:3
r in Korn shell language, 2:11
r in **mail**, 2:24
radio in HTML, 7:21
 RCS, 8:1
 read permission, 1:10, 1:12
read, 5:15–16, 5:23
 read protected, 1:10
 real name, 4:18, 4:27
recipients, 3:22
RECT, 6:18
 redirect output of loop, 4:15
 redirect the standard input, 3:28
 redirect the standard output, 3:18
regcomp, 7:15
 regular expression, 1:8, 8:4–5
 regular expression, limits of, 7:15
 regular expressions, 6:7
 regular expressions in C, 7:15
 regular intervals, 7:9
 relative pathname, 1:9
 remove a file, 2:5
 rename, 2:4
 rename files, 5:22
reset in HTML, 7:22
 Revision Control System, 8:1
rgb.txt, 5:12
ri, 4:7
 Ritchie, Dennis, 2:22
rm, 2:5, 3:22, 7:3
rm -i, 7:5
rmdir, 1:13, 5:18
 Roman numerals, 9:3
 root directory, 1:4, 1:9
 Ruby, 4:7, 5:5, 5:7, 6:7
 rule in HTML, 3:11
rxwxrwxrwx, 1:10–11
s bit, 9:10
s commands, 8:3
%s in C **scanf**, 7:14
s in **mail**, 2:25
 Safari, 3:7
 Saturday Night Special, 5:15
 scaffolding, 8:7, 9:4
scale, 2:21
scale in **bc**, 4:26
scanf in C, 7:14
 SCCS, 8:1
 screen, 2:14, 3:20, 5:5
 screen output, 2:21
 script, 3:15
script, 3:20
ScriptAlias in web server, 3:7
 scroll lock, 1:20
sed, 4:14, 6:7
 selective, 7:8
 semicolon in HTML, 3:11
 server, 3:29
set, 4:4
set -e, 5:8
set in **vi**, 3:2
set -x, 5:8
setenv, 4:4
 set-uid bit, 9:10, 10:7
sftp, 4:30
sh, 2:2
sh5, 2:2
shadow, 2:2, 7:6

Shakespeare.complete, 1:3, 2:1
 shared object, 11:2
\$SHELL, 1:3
 shells, 2:2
 shellscript, 3:16
showmode in **vi**, 3:3
S_I macros, 9:11
 side-by-side, 4:1
 Silicon Graphics, 1:18
single quotes, 2:5
 single quotes, 3:14–15, 4:3
 single quotes in shell language, 8:11
 slash, 1:9
 sleep, 2:16
sleep, 5:15
 Solaris, 1:18
sort, 1:1, 1:5–6, 2:21, 3:14
sort +3n, 3:27
sort -n, 3:26
 Source Code Control System, 8:1
 space bar, 1:2
 split a long statement, 2:12, 3:24
ssh, 1:19
 standard error output, 5:5
 standard input, 2:14, 3:28, 5:5
 standard output, 2:14, 3:13, 3:18, 5:5
 staple, 3:19
 stop a program, 6:5
 stopped jobs, 1:20
 string compare, 4:21
 strong emphasis in HTML, 3:11
**** in HTML, 3:11
 Stroustrup, Bjarne, 2:22
SUBMIT in HTML, 7:21
 substitute commands, 8:3
 success, 4:26
 syntax, 7:15
 syntax, shell, 2:21
sys.exit in Python, 4:7
 system administrator, 1:18
 table in HTML, 3:11
<TABLE> in HTML, 3:11
 tagged regular expressions, 7:12
tail +10, 3:26
tail -10, 3:26
tail, 2:1, 3:14, 3:25
<TD> in HTML, 3:11
tee, 2:23, 3:19
telnetd, 6:2
 temporary file name, 3:22
 temporary variable, 5:1
 Tenex shell, 2:2
 tense, 3:16
\$TERM, 1:3
 terminal, 2:14, 5:5
 terminals, two, 6:1
test, 3:16
test -t, 5:16
<TH> in HTML, 3:11
then in shell language, 4:19
 Thompson, Ken, 2:22
 Torvalds, Linus, 1:18
 touch-sensitive, 6:18
tr ,, 2:23
tr, 2:17, 4:1
tr -c, 5:12
tr -d, 5:11
<TR> in HTML, 3:11
 trace the execution of a shellscript, 5:8
.trash, 7:3
 true, when is **if**, 4:27
tty, 5:20, 6:1
 two terminals, 6:1
**** in HTML, 3:11
 Ultrix, 1:18
umlaut in HTML, 3:11
uniq, 1:5–6, 5:9
uniq -c, 5:9
uniq -d, 3:14, 5:9
uniq -u, 5:9
 Unix, 1:18
 Unix, central mystery of, 2:14
 Unix, inventors of, 2:22
 unordered list in HTML, 3:11
 unusual execute permission, 6:14
u+r, 3:18
u-r, 3:18
 URL, 3:29
USEMAP, 6:20
\$USER, 4:21
UserDir in web server, 3:7
/usr/dict/websters, 1:3
/usr/dict/words, 1:2, 1:6
/usr/games, 1:13
/usr/pub/ascii, 2:1, 12:1
u+w, 3:18
u-w, 3:18
u+x, 3:18
u-x, 3:18
v/ in **vi**, 6:5
/var/apache2/2.2/logs/access_log, 3:26
 variable, 5:21
 variable, avoid repetition with a, 5:22
 variable in shell language, 4:3, 4:7
 variable, temporary, 5:1
/var/mail directory, 3:22
/var/spool/cron/atjobs, 7:7

vi, 3:1, 6:3, 6:7, 7:1, 8:3
vi calisthenics, 8:6
vi -r, 6:2
view, 6:7
vim, 7:1
vowel, 6:17
w in **vi**, 6:4
wall, 3:20
wc, 2:17
Web, 1:18, 3:7
web browser, 3:7
web page, 3:7
wee, 7:7
what is, 1:2, 5:19
where is, 3:20
which, 3:16, 7:1
while, 4:29
white space, 1:1
who, 1:1, 1:5, 2:14, 7:1
who am I, 6:1
whoami, 1:1
wildcards in C **scanf**, 7:14
wildcards in shell language, 8:14
World Wide Web, 1:18, 3:7
write in **vi**, 6:4
write permission, 1:10, 1:12, 2:18
write protected, 1:10
www, 1:18
x = "hello", 4:3
x, 6:14
x in **mail**, 2:25
Xenix, 1:18
yacc, 7:16
your own version of **rm**, 7:3
□