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≔ CS50 Manual Pages
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Manual pages for the C standard library, the C POSIX library, and the CS50 Library for those less comfortable.

Search



#### aio.h

```
aio_cancel - cancel an outstanding asynchronous I/O request
aio_error - get error status of asynchronous I/O operation
aio_fsync - asynchronous file synchronization
aio_init - asynchronous I/O initialization
aio_read - asynchronous read
aio_return - get return status of asynchronous I/O operation
aio_suspend - wait for asynchronous I/O operation or timeout
aio_write - asynchronous write
lio_listio - initiate a list of I/O requests
```

# arpa/inet.h

```
byteorder - convert values between host and network byte order
htonl - convert values between host and network byte order
htons - convert values between host and network byte order
inet_net_ntop - Internet network number conversion
inet_net_pton - Internet network number conversion
inet_ntop - convert IPv4 and IPv6 addresses from binary to text form
inet_pton - convert IPv4 and IPv6 addresses from text to binary form
ntohl - convert values between host and network byte order
ntohs - convert values between host and network byte order
```

### assert.h

```
assert - abort the program if assertion is false
assert_perror - test errnum and abort
```

### complex.h

```
cabs - absolute value of a complex number
cabsf - absolute value of a complex number
cabsl - absolute value of a complex number
cacos - complex arc cosine
cacosf - complex arc cosine
cacosh - complex arc hyperbolic cosine
cacoshf - complex arc hyperbolic cosine
cacoshl - complex arc hyperbolic cosine
cacosl - complex arc cosine
carg - calculate the complex argument
cargf - calculate the complex argument
cargl - calculate the complex argument
casin - complex arc sine
casinf - complex arc sine
casinh - complex arc sine hyperbolic
casinhf - complex arc sine hyperbolic
casinhl - complex arc sine hyperbolic
casinl - complex arc sine
catan - complex arc tangents
catanf - complex arc tangents
catanh - complex arc tangents hyperbolic
catanhf - complex arc tangents hyperbolic
catanhl - complex arc tangents hyperbolic
catanl - complex arc tangents
ccos - complex cosine function
ccosf - complex cosine function
ccosh - complex hyperbolic cosine
ccoshf - complex hyperbolic cosine
ccoshl - complex hyperbolic cosine
ccosl - complex cosine function
cexp - complex exponential function
cexp2 - base-2 exponent of a complex number
cexp2f - base-2 exponent of a complex number
cexp2l - base-2 exponent of a complex number
cexpf - complex exponential function
cexpl - complex exponential function
cimag - get imaginary part of a complex number
cimagf - get imaginary part of a complex number
cimagl - get imaginary part of a complex number
clog - natural logarithm of a complex number
```

```
clog10 - base-10 logarithm of a complex number
clog10f - base-10 logarithm of a complex number
clog101 - base-10 logarithm of a complex number
clog2 - base-2 logarithm of a complex number
clog2f - base-2 logarithm of a complex number
clog2l - base-2 logarithm of a complex number
clogf - natural logarithm of a complex number
clogl - natural logarithm of a complex number
complex - basics of complex mathematics
conj - calculate the complex conjugate
conjf - calculate the complex conjugate
conjl - calculate the complex conjugate
cpow - complex power function
cpowf - complex power function
cpowl - complex power function
cproj - project into Riemann Sphere
cprojf - project into Riemann Sphere
cprojl - project into Riemann Sphere
creal - get real part of a complex number
crealf - get real part of a complex number
creall - get real part of a complex number
csin - complex sine function
csinf - complex sine function
csinh - complex hyperbolic sine
csinhf - complex hyperbolic sine
csinhl - complex hyperbolic sine
csinl - complex sine function
csqrt - complex square root
csqrtf - complex square root
csqrtl - complex square root
ctan - complex tangent function
ctanf - complex tangent function
ctanh - complex hyperbolic tangent
ctanhf - complex hyperbolic tangent
ctanhl - complex hyperbolic tangent
ctanl - complex tangent function
```

### cs50.h

```
get_char - prompts user for a line of text from stdin and returns...
get_double - prompts user for a line of text from stdin and returns...
get float - prompts user for a line of text from stdin and returns...
```

```
get_int - prompts user for a line of text from stdin and returns...
get_long - prompts user for a line of text from stdin and returns...
get_long_long - prompts user for a line of text from stdin and returns...
get_string - prompts user for a line of text from stdin and returns...
```

## ctype.h

```
isalnum - character classification functions
isalnum 1 - character classification functions
isalpha - character classification functions
isalpha 1 - character classification functions
isascii - character classification functions
isascii l - character classification functions
isblank - character classification functions
isblank 1 - character classification functions
iscntrl - character classification functions
iscntrl 1 - character classification functions
isdigit - character classification functions
isdigit_l - character classification functions
isgraph - character classification functions
isgraph 1 - character classification functions
islower - character classification functions
islower 1 - character classification functions
isprint - character classification functions
isprint 1 - character classification functions
ispunct - character classification functions
ispunct 1 - character classification functions
isspace - character classification functions
isspace_l - character classification functions
isupper - character classification functions
isupper 1 - character classification functions
isxdigit - character classification functions
isxdigit 1 - character classification functions
toascii - convert character to ASCII
tolower - convert uppercase or lowercase
tolower 1 - convert uppercase or lowercase
toupper - convert uppercase or lowercase
toupper 1 - convert uppercase or lowercase
```

# dirent.h

```
alphasort - scan a directory for matching entries
getdirentries - get directory entries in a filesystem-independent format
readdir - read a directory
readdir_r - read a directory
scandir - scan a directory for matching entries
scandirat - scan a directory for matching entries
seekdir - set the position of the next readdir() call in the dir...
telldir - return current location in directory stream
versionsort - scan a directory for matching entries
```

### dlfcn.h

```
dladdr - translate address to symbolic information
dladdr1 - translate address to symbolic information
dlclose - open and close a shared object
dlerror - obtain error diagnostic for functions in the dlopen API
dlmopen - open and close a shared object
dlopen - open and close a shared object
dlsym - obtain address of a symbol in a shared object or execu...
dlvsym - obtain address of a symbol in a shared object or execu...
```

#### errno.h

```
errno - number of last error
program_invocation_name - obtain name used to invoke calling program
program_invocation_short_name - obtain name used to invoke calling program
```

### fcntl.h

```
arm_fadvise - predeclare an access pattern for file data
arm_fadvise64_64 - predeclare an access pattern for file data
arm_sync_file_range - sync a file segment with disk
fadvise64 - predeclare an access pattern for file data
fadvise64_64 - predeclare an access pattern for file data
fallocate - manipulate file space
fanotify_init - create and initialize fanotify group
futimens - change file timestamps with nanosecond precision
futimesat - change timestamps of a file relative to a directory fi...
posix_fadvise - predeclare an access pattern for file data
posix_fallocate - allocate file space
```

```
readahead - initiate file readahead into page cache
splice - splice data to/from a pipe
sync_file_range - sync a file segment with disk
sync_file_range2 - sync a file segment with disk
tee - duplicating pipe content
utimensat - change file timestamps with nanosecond precision
vmsplice - splice user pages to/from a pipe
```

### fenv.h

feclearexcept - floating-point rounding and exception handling fedisableexcept - floating-point rounding and exception handling feenableexcept - floating-point rounding and exception handling fegetenv - floating-point rounding and exception handling fegetexcept - floating-point rounding and exception handling fegetexceptflag - floating-point rounding and exception handling fegetround - floating-point rounding and exception handling feholdexcept - floating-point rounding and exception handling ferv - floating-point rounding and exception handling feraiseexcept - floating-point rounding and exception handling fesetexceptflag - floating-point rounding and exception handling fesetround - floating-point rounding and exception handling fesetround - floating-point rounding and exception handling fetestexcept - floating-point rounding and exception handling fetestexcept - floating-point rounding and exception handling

## fmtmsg.h

```
addseverity - introduce new severity classes
fmtmsg - print formatted error messages
```

#### fnmatch.h

fnmatch - match filename or pathname

#### ftw.h

```
ftw - file tree walk
nftw - file tree walk
```

## glob.h

```
glob - find pathnames matching a pattern, free memory from gl... globfree - find pathnames matching a pattern, free memory from gl...
```

### grp.h

```
fgetgrent_r - get group file entry reentrantly
getgrent_r - get group file entry reentrantly
getgrouplist - get list of groups to which a user belongs
putgrent - write a group database entry to a file
```

#### iconv.h

```
iconv - perform character set conversion
iconv_close - deallocate descriptor for character set conversion
iconv_open - allocate descriptor for character set conversion
```

# inttypes.h

```
strtoimax - convert string to integer
strtoumax - convert string to integer
```

# langinfo.h

```
nl_langinfo - query language and locale information
nl_langinfo_l - query language and locale information
```

# libgen.h

```
basename - parse pathname components
dirname - parse pathname components
```

### limits.h

```
MB_LEN_MAX - maximum multibyte length of a character across all loc... realpath - return the canonicalized absolute pathname
```

### locale.h

```
duplocale - duplicate a locale object
freelocale - create, modify, and free a locale object
locale - description of multilanguage support
localeconv - get numeric formatting information
newlocale - create, modify, and free a locale object
setlocale - set the current locale
uselocale - set/get the locale for the calling thread
```

### math.h

```
acos - arc cosine function
acosf - arc cosine function
acosh - inverse hyperbolic cosine function
acoshf - inverse hyperbolic cosine function
acoshl - inverse hyperbolic cosine function
acosl - arc cosine function
asin - arc sine function
asinf - arc sine function
asinh - inverse hyperbolic sine function
asinhf - inverse hyperbolic sine function
asinhl - inverse hyperbolic sine function
asinl - arc sine function
atan - arc tangent function
atan2 - arc tangent function of two variables
atan2f - arc tangent function of two variables
atan21 - arc tangent function of two variables
atanf - arc tangent function
atanh - inverse hyperbolic tangent function
atanhf - inverse hyperbolic tangent function
atanhl - inverse hyperbolic tangent function
atanl - arc tangent function
cbrt - cube root function
cbrtf - cube root function
cbrtl - cube root function
ceil - ceiling function: smallest integral value not less tha...
ceilf - ceiling function: smallest integral value not less tha...
```

```
ceill - ceiling function: smallest integral value not less tha...
copysign - copy sign of a number
copysignf - copy sign of a number
copysignl - copy sign of a number
cos - cosine function
cosf - cosine function
cosh - hyperbolic cosine function
coshf - hyperbolic cosine function
coshl - hyperbolic cosine function
cosl - cosine function
drem - floating-point remainder function
dremf - floating-point remainder function
dreml - floating-point remainder function
erf - error function
erfc - complementary error function
erfcf - complementary error function
erfcl - complementary error function
erff - error function
erfl - error function
exp - base-e exponential function
exp10 - base-10 exponential function
exp10f - base-10 exponential function
exp10l - base-10 exponential function
exp2 - base-2 exponential function
exp2f - base-2 exponential function
exp2l - base-2 exponential function
expf - base-e exponential function
expl - base-e exponential function
expm1 - exponential minus 1
expm1f - exponential minus 1
expm11 - exponential minus 1
fabs - absolute value of floating-point number
fabsf - absolute value of floating-point number
fabsl - absolute value of floating-point number
fdim - positive difference
fdimf - positive difference
fdiml - positive difference
finite - BSD floating-point classification functions
finitef - BSD floating-point classification functions
finitel - BSD floating-point classification functions
floor - largest integral value not greater than argument
floorf - largest integral value not greater than argument
floorl - largest integral value not greater than argument
```

```
fma - floating-point multiply and add
fmaf - floating-point multiply and add
fmal - floating-point multiply and add
fmax - determine maximum of two floating-point numbers
fmaxf - determine maximum of two floating-point numbers
fmaxl - determine maximum of two floating-point numbers
fmin - determine minimum of two floating-point numbers
fminf - determine minimum of two floating-point numbers
fminl - determine minimum of two floating-point numbers
fmod - floating-point remainder function
fmodf - floating-point remainder function
fmodl - floating-point remainder function
fpclassify - floating-point classification macros
frexp - convert floating-point number to fractional and integr...
frexpf - convert floating-point number to fractional and integr...
frexpl - convert floating-point number to fractional and integr...
gamma - (logarithm of the) gamma function
gammaf - (logarithm of the) gamma function
gammal - (logarithm of the) gamma function
HUGE VAL - floating-point constants
HUGE VALF - floating-point constants
HUGE VALL - floating-point constants
hypot - Euclidean distance function
hypotf - Euclidean distance function
hypotl - Euclidean distance function
ilogb - get integer exponent of a floating-point value
ilogbf - get integer exponent of a floating-point value
ilogbl - get integer exponent of a floating-point value
INFINITY - floating-point constants
isfinite - floating-point classification macros
isgreater - floating-point relational tests without exception for NaN
isgreaterequal - floating-point relational tests without exception for NaN
isinf - floating-point classification macros
isinff - BSD floating-point classification functions
isinfl - BSD floating-point classification functions
isless - floating-point relational tests without exception for NaN
islessequal - floating-point relational tests without exception for NaN
islessgreater - floating-point relational tests without exception for NaN
isnan - floating-point classification macros
isnanf - BSD floating-point classification functions
isnanl - BSD floating-point classification functions
isnormal - floating-point classification macros
isunordered - floating-point relational tests without exception for NaN
```

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```
j0 - Bessel functions of the first kind
j0f - Bessel functions of the first kind
j01 - Bessel functions of the first kind
il - Bessel functions of the first kind
ilf - Bessel functions of the first kind
ill - Bessel functions of the first kind
jn - Bessel functions of the first kind
jnf - Bessel functions of the first kind
inl - Bessel functions of the first kind
ldexp - multiply floating-point number by integral power of 2
ldexpf - multiply floating-point number by integral power of 2
ldexpl - multiply floating-point number by integral power of 2
lgamma - log gamma function
lgamma r - log gamma function
lgammaf - log gamma function
lgammaf r - log gamma function
lgammal - log gamma function
lgammal r - log gamma function
llrint - round to nearest integer
llrintf - round to nearest integer
llrintl - round to nearest integer
11round - round to nearest integer
11roundf - round to nearest integer
llroundl - round to nearest integer
log - natural logarithmic function
log10 - base-10 logarithmic function
log10f - base-10 logarithmic function
log101 - base-10 logarithmic function
log1p - logarithm of 1 plus argument
log1pf - logarithm of 1 plus argument
log1pl - logarithm of 1 plus argument
log2 - base-2 logarithmic function
log2f - base-2 logarithmic function
log2l - base-2 logarithmic function
logb - get exponent of a floating-point value
logbf - get exponent of a floating-point value
logbl - get exponent of a floating-point value
logf - natural logarithmic function
log1 - natural logarithmic function
lrint - round to nearest integer
lrintf - round to nearest integer
lrintl - round to nearest integer
lround - round to nearest integer
```

```
lroundf - round to nearest integer
lroundl - round to nearest integer
math error - detecting errors from mathematical functions
matherr - SVID math library exception handling
modf - extract signed integral and fractional values from flo...
modff - extract signed integral and fractional values from flo...
modfl - extract signed integral and fractional values from flo...
NAN - floating-point constants
nan - return 'Not a Number'
nanf - return 'Not a Number'
nanl - return 'Not a Number'
nearbyint - round to nearest integer
nearbyintf - round to nearest integer
nearbyintl - round to nearest integer
nextafter - floating-point number manipulation
nextafterf - floating-point number manipulation
nextafterl - floating-point number manipulation
nextdown - return next floating-point number toward positive/nega...
nextdownf - return next floating-point number toward positive/nega...
nextdownl - return next floating-point number toward positive/nega...
nexttoward - floating-point number manipulation
nexttowardf - floating-point number manipulation
nexttowardl - floating-point number manipulation
nextup - return next floating-point number toward positive/nega...
nextupf - return next floating-point number toward positive/nega...
nextupl - return next floating-point number toward positive/nega...
pow - power functions
pow10 - base-10 power functions
pow10f - base-10 power functions
pow101 - base-10 power functions
powf - power functions
powl - power functions
remainder - floating-point remainder function
remainderf - floating-point remainder function
remainderl - floating-point remainder function
remquo - remainder and part of quotient
remquof - remainder and part of quotient
remquol - remainder and part of quotient
rint - round to nearest integer
rintf - round to nearest integer
rintl - round to nearest integer
round - round to nearest integer, away from zero
roundf - round to nearest integer, away from zero
```

```
roundl - round to nearest integer, away from zero
scalb - multiply floating-point number by integral power of ra...
scalbf - multiply floating-point number by integral power of ra...
scalbl - multiply floating-point number by integral power of ra...
scalbln - multiply floating-point number by integral power of radix
scalblnf - multiply floating-point number by integral power of radix
scalblnl - multiply floating-point number by integral power of radix
scalbn - multiply floating-point number by integral power of radix
scalbnf - multiply floating-point number by integral power of radix
scalbnl - multiply floating-point number by integral power of radix
signbit - test sign of a real floating-point number
signgam - log gamma function
significand - get mantissa of floating-point number
significandf - get mantissa of floating-point number
significandl - get mantissa of floating-point number
sin - sine function
sincos - calculate sin and cos simultaneously
sincosf - calculate sin and cos simultaneously
sincosl - calculate sin and cos simultaneously
sinf - sine function
sinh - hyperbolic sine function
sinhf - hyperbolic sine function
sinhl - hyperbolic sine function
sinl - sine function
sqrt - square root function
sqrtf - square root function
sqrtl - square root function
tan - tangent function
tanf - tangent function
tanh - hyperbolic tangent function
tanhf - hyperbolic tangent function
tanhl - hyperbolic tangent function
tanl - tangent function
tgamma - true gamma function
tgammaf - true gamma function
tgammal - true gamma function
trunc - round to integer, toward zero
truncf - round to integer, toward zero
truncl - round to integer, toward zero
y0 - Bessel functions of the second kind
yOf - Bessel functions of the second kind
y01 - Bessel functions of the second kind
v1 - Bessel functions of the second kind
```

```
y1f - Bessel functions of the second kind
y1l - Bessel functions of the second kind
yn - Bessel functions of the second kind
ynf - Bessel functions of the second kind
ynl - Bessel functions of the second kind
```

# monetary.h

```
strfmon - convert monetary value to a string
strfmon 1 - convert monetary value to a string
```

### mqueue.h

```
mq_close - close a message queue descriptor
mq_getattr - get/set message queue attributes
mq_notify - register for notification when a message is available
mq_notify - register for notification when a message is available
mq_open - open a message queue
mq_open - open a message queue
mq_receive - receive a message from a message queue
mq_send - send a message to a message queue
mq_setattr - get/set message queue attributes
mq_timedreceive - receive a message from a message queue
mq_timedreceive - receive a message from a message queue
mq_timedsend - send a message to a message queue
mq_timedsend - send a message to a message queue
mq_unlink - remove a message queue
mq_unlink - remove a message queue
```

### net/if.h

```
if_freenameindex - get network interface names and indexes
if_indextoname - mappings between network interface names and indexes
if_nameindex - get network interface names and indexes
if_nametoindex - mappings between network interface names and indexes
```

### netdb.h

```
endhostent - get network host entry
```

```
endnetent - get network entry
endnetgrent - handle network group entries
endprotoent - get protocol entry
endrpcent - get RPC entry
endservent - get service entry
gai_cancel - asynchronous network address and service translation
gai_error - asynchronous network address and service translation
gai_suspend - asynchronous network address and service translation
getaddrinfo_a - asynchronous network address and service translation
gethostbyaddr - get network host entry
gethostbyaddr_r - get network host entry
gethostbyname - get network host entry
gethostbyname2 - get network host entry
gethostbyname2_r - get network host entry
gethostbyname_r - get network host entry
gethostent - get network host entry
gethostent_r - get network host entry
getnetbyaddr - get network entry
getnetbyaddr_r - get network entry (reentrant)
getnetbyname - get network entry
getnetbyname_r - get network entry (reentrant)
getnetent - get network entry
getnetent_r - get network entry (reentrant)
getnetgrent - handle network group entries
getnetgrent_r - handle network group entries
getprotobyname - get protocol entry
getprotobyname_r - get protocol entry (reentrant)
getprotobynumber - get protocol entry
getprotobynumber_r - get protocol entry (reentrant)
getprotoent - get protocol entry
getprotoent_r - get protocol entry (reentrant)
getrpcbyname - get RPC entry
getrpcbyname_r - get RPC entry (reentrant)
getrpcbynumber - get RPC entry
getrpcbynumber_r - get RPC entry (reentrant)
getrpcent - get RPC entry
getrpcent_r - get RPC entry (reentrant)
getservbyname - get service entry
getservbyname_r - get service entry (reentrant)
getservbyport - get service entry
getservbyport_r - get service entry (reentrant)
getservent - get service entry
getservent_r - get service entry (reentrant)
```

```
h_errno - get network host entry
herror - get network host entry
hstrerror - get network host entry
innetgr - handle network group entries
iruserok - routines for returning a stream to a remote command
iruserok af - routines for returning a stream to a remote command
rcmd - routines for returning a stream to a remote command
rcmd af - routines for returning a stream to a remote command
rexec - return stream to a remote command
rexec af - return stream to a remote command
rresvport - routines for returning a stream to a remote command
rresvport af - routines for returning a stream to a remote command
ruserok - routines for returning a stream to a remote command
ruserok af - routines for returning a stream to a remote command
sethostent - get network host entry
setnetent - get network entry
setnetgrent - handle network group entries
setprotoent - get protocol entry
setrpcent - get RPC entry
setservent - get service entry
```

### netinet/in.h

```
dn comp - resolver routines
dn expand - resolver routines
res init - resolver routines
res mkquery - resolver routines
res_nclose - resolver routines
res_ninit - resolver routines
res nmkquery - resolver routines
res nquery - resolver routines
res nquerydomain - resolver routines
res_nsearch - resolver routines
res nsend - resolver routines
res query - resolver routines
res querydomain - resolver routines
res search - resolver routines
res send - resolver routines
resolver - resolver routines
```

# nl\_types.h

```
catclose - open/close a message catalog
catgets - get message from a message catalog
catopen - open/close a message catalog
```

# poll.h

```
poll - wait for some event on a file descriptor
ppoll - wait for some event on a file descriptor
```

## pthread.h

```
pthread attr destroy - initialize and destroy thread attributes object
pthread attr getaffinity np - set/get CPU affinity attribute in thread at...
pthread attr getdetachstate - set/get detach state attribute in thread at...
pthread attr getguardsize - set/get guard size attribute in thread attrib...
pthread attr getinheritsched - set/get inherit-scheduler attribute in thr...
pthread_attr_getschedparam - set/get scheduling parameter attributes in t...
pthread attr getschedpolicy - set/get scheduling policy attribute in thre...
pthread attr getscope - set/get contention scope attribute in thread attr...
pthread_attr_getsigmask_np - set/get signal mask attribute in thread attr...
pthread attr getstack - set/get stack attributes in thread attributes object
pthread attr getstackaddr - set/get stack address attribute in thread att...
pthread attr getstacksize - set/get stack size attribute in thread attrib...
pthread attr init - initialize and destroy thread attributes object
pthread attr setaffinity np - set/get CPU affinity attribute in thread at...
pthread_attr_setdetachstate - set/get detach state attribute in thread at...
pthread attr setguardsize - set/get guard size attribute in thread attrib...
pthread attr setinheritsched - set/get inherit-scheduler attribute in thr...
pthread_attr_setschedparam - set/get scheduling parameter attributes in t...
pthread attr setschedpolicy - set/get scheduling policy attribute in thre...
pthread_attr_setscope - set/get contention scope attribute in thread attr...
pthread_attr_setsigmask_np - set/get signal mask attribute in thread attr...
pthread attr setstack - set/get stack attributes in thread attributes object
pthread_attr_setstackaddr - set/get stack address attribute in thread att...
pthread attr setstacksize - set/get stack size attribute in thread attrib...
pthread cancel - send a cancellation request to a thread
pthread_cleanup_pop - push and pop thread cancellation clean-up handlers
pthread_cleanup_pop_restore_np - push and pop thread cancellation clean-u...
pthread cleanup push - push and pop thread cancellation clean-up handlers
pthread_cleanup_push_defer_np - push and pop thread cancellation clean-up...
pthread_create - create a new thread
```

```
pthread_detach - detach a thread
pthread_equal - compare thread IDs
pthread exit - terminate calling thread
pthread getaffinity np - set/get CPU affinity of a thread
pthread getattr default np - get or set default thread-creation attributes
pthread getattr np - get attributes of created thread
pthread_getconcurrency - set/get the concurrency level
pthread getcpuclockid - retrieve ID of a thread's CPU time clock
pthread getname np - set/get the name of a thread
pthread getschedparam - set/get scheduling policy and parameters of a thread
pthread join - join with a terminated thread
pthread kill other threads np - terminate all other threads in process
pthread mutex consistent - make a robust mutex consistent
pthread mutex consistent np - make a robust mutex consistent
pthread mutexattr getpshared - get/set process-shared mutex attribute
pthread mutexattr getrobust - get and set the robustness attribute of a m...
pthread mutexattr getrobust np - get and set the robustness attribute of ...
pthread mutexattr setpshared - get/set process-shared mutex attribute
pthread mutexattr setrobust - get and set the robustness attribute of a m...
pthread mutexattr setrobust np - get and set the robustness attribute of ...
pthread_rwlockattr_getkind_np - set/get the read-write lock kind of the t...
pthread rwlockattr setkind np - set/get the read-write lock kind of the t...
pthread self - obtain ID of the calling thread
pthread setaffinity np - set/get CPU affinity of a thread
pthread setattr default np - get or set default thread-creation attributes
pthread_setcancelstate - set cancelability state and type
pthread_setcanceltype - set cancelability state and type
pthread setconcurrency - set/get the concurrency level
pthread setname np - set/get the name of a thread
pthread_setschedparam - set/get scheduling policy and parameters of a thread
pthread_setschedprio - set scheduling priority of a thread
pthread spin destroy - initialize or destroy a spin lock
pthread spin init - initialize or destroy a spin lock
pthread spin lock - lock and unlock a spin lock
pthread_spin_trylock - lock and unlock a spin lock
pthread_spin_unlock - lock and unlock a spin lock
pthread testcancel - request delivery of any pending cancellation request
pthread_timedjoin_np - try to join with a terminated thread
pthread_tryjoin_np - try to join with a terminated thread
pthread_yield - yield the processor
```

### pwd.h

```
fgetpwent_r - get passwd file entry reentrantly
getpwent_r - get passwd file entry reentrantly
```

# regex.h

```
regcomp - POSIX regex functions
regerror - POSIX regex functions
regex - POSIX regex functions
regexec - POSIX regex functions
regfree - POSIX regex functions
```

#### sched.h

```
clone2 - create a child process
clone - create a child process
clone2 - create a child process
clone3 - create a child process
CPU ALLOC - macros for manipulating CPU sets
CPU ALLOC SIZE - macros for manipulating CPU sets
CPU AND - macros for manipulating CPU sets
CPU AND S - macros for manipulating CPU sets
CPU CLR - macros for manipulating CPU sets
CPU CLR S - macros for manipulating CPU sets
CPU COUNT - macros for manipulating CPU sets
CPU COUNT S - macros for manipulating CPU sets
CPU_EQUAL - macros for manipulating CPU sets
CPU EQUAL S - macros for manipulating CPU sets
CPU FREE - macros for manipulating CPU sets
CPU ISSET - macros for manipulating CPU sets
CPU ISSET S - macros for manipulating CPU sets
CPU_OR - macros for manipulating CPU sets
CPU OR S - macros for manipulating CPU sets
CPU SET - macros for manipulating CPU sets
CPU_SET_S - macros for manipulating CPU sets
CPU XOR - macros for manipulating CPU sets
CPU XOR S - macros for manipulating CPU sets
CPU_ZERO - macros for manipulating CPU sets
CPU ZERO S - macros for manipulating CPU sets
sched get priority max - get static priority range
sched_get_priority_min - get static priority range
sched_getaffinity - set and get a thread's CPU affinity mask
```

```
sched_getattr - set and get scheduling policy and attributes
sched_getcpu - determine CPU on which the calling thread is running
sched_getparam - set and get scheduling parameters
sched_getscheduler - set and get scheduling policy/parameters
sched_rr_get_interval - get the SCHED_RR interval for the named process
sched_setaffinity - set and get a thread's CPU affinity mask
sched_setattr - set and get scheduling policy and attributes
sched_setparam - set and get scheduling parameters
sched_setscheduler - set and get scheduling policy/parameters
sched_yield - yield the processor
setns - reassociate thread with a namespace
unshare - disassociate parts of the process execution context
```

### search.h

```
hcreate - hash table management
hcreate r - hash table management
hdestroy - hash table management
hdestroy r - hash table management
hsearch - hash table management
hsearch r - hash table management
insque - insert/remove an item from a queue
lfind - linear search of an array
lsearch - linear search of an array
remque - insert/remove an item from a queue
tdelete - manage a binary search tree
tdestroy - manage a binary search tree
tfind - manage a binary search tree
tsearch - manage a binary search tree
twalk - manage a binary search tree
twalk r - manage a binary search tree
```

# semaphore.h

```
sem_close - close a named semaphore
sem_destroy - destroy an unnamed semaphore
sem_getvalue - get the value of a semaphore
sem_init - initialize an unnamed semaphore
sem_open - initialize and open a named semaphore
sem_post - unlock a semaphore
sem_timedwait - lock a semaphore
```

```
sem_trywait - lock a semaphore
sem_unlink - remove a named semaphore
sem wait - lock a semaphore
```

# setjmp.h

```
longjmp - performing a nonlocal goto
setjmp - performing a nonlocal goto
siglongjmp - performing a nonlocal goto
sigsetjmp - performing a nonlocal goto
```

# signal.h

```
bsd signal - signal handling with BSD semantics
gsignal - software signal facility
killpg - send signal to a process group
pidfd send signal - send a signal to a process specified by a file descri...
psiginfo - print signal description
psignal - print signal description
pthread kill - send a signal to a thread
pthread sigmask - examine and change mask of blocked signals
pthread sigqueue - queue a signal and data to a thread
raise - send a signal to the caller
rt sigaction - examine and change a signal action
rt sigpending - examine pending signals
rt sigprocmask - examine and change blocked signals
rt sigsuspend - wait for a signal
rt sigtimedwait - synchronously wait for queued signals
sigaction - examine and change a signal action
sigaddset - POSIX signal set operations
sigaltstack - set and/or get signal stack context
sigandset - POSIX signal set operations
sigblock - BSD signal API
sigdelset - POSIX signal set operations
sigemptyset - POSIX signal set operations
sigfillset - POSIX signal set operations
siggetmask - BSD signal API
sighold - System V signal API
sigignore - System V signal API
siginterrupt - allow signals to interrupt system calls
sigisemptyset - POSIX signal set operations
```

```
sigismember - POSIX signal set operations
sigmask - BSD signal API
signal - ANSI C signal handling
sigorset - POSIX signal set operations
sigpause - atomically release blocked signals and wait for interrupt
sigpending - examine pending signals
sigprocmask - examine and change blocked signals
sigqueue - queue a signal and data to a process
sigrelse - System V signal API
sigset - System V signal API
sigsetmask - BSD signal API
sigsetops - POSIX signal set operations
sigstack - set and/or get signal stack context
sigsuspend - wait for a signal
sigtimedwait - synchronously wait for queued signals
sigvec - BSD signal API
sigwait - wait for a signal
sigwaitinfo - synchronously wait for queued signals
ssignal - software signal facility
sysv signal - signal handling with System V semantics
timer create - create a POSIX per-process timer
```

# spawn.h

```
posix_spawn - spawn a process
posix_spawnp - spawn a process
```

# stdarg.h

```
stdarg - variable argument lists
va_arg - variable argument lists
va_copy - variable argument lists
va_end - variable argument lists
va_start - variable argument lists
```

### stddef.h

```
offsetof - offset of a structure member
wcstoimax - convert wide-character string to integer
wcstoumax - convert wide-character string to integer
```

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#### stdio.h

```
fbufsize - interfaces to stdio FILE structure
flbf - interfaces to stdio FILE structure
fpending - interfaces to stdio FILE structure
fpurge - purge a stream
freadable - interfaces to stdio FILE structure
freading - interfaces to stdio FILE structure
fsetlocking - interfaces to stdio FILE structure
fwritable - interfaces to stdio FILE structure
fwriting - interfaces to stdio FILE structure
flushlbf - interfaces to stdio FILE structure
addmntent - get filesystem descriptor file entry
asprintf - print to allocated string
clearerr - check and reset stream status
clearerr unlocked - nonlocking stdio functions
ctermid - get controlling terminal name
dprintf - formatted output conversion
endmntent - get filesystem descriptor file entry
fclose - close a stream
fcloseall - close all open streams
fdopen - stream open functions
feof - check and reset stream status
feof unlocked - nonlocking stdio functions
ferror - check and reset stream status
ferror unlocked - nonlocking stdio functions
fflush - flush a stream
fflush unlocked - nonlocking stdio functions
fgetc - input of characters and strings
fgetc_unlocked - nonlocking stdio functions
fgetgrent - get group file entry
fgetpos - reposition a stream
fgetpwent - get password file entry
fgets - input of characters and strings
fgets unlocked - nonlocking stdio functions
fgetwc - read a wide character from a FILE stream
fgetwc_unlocked - nonlocking stdio functions
fgetws unlocked - nonlocking stdio functions
fileno - check and reset stream status
fileno unlocked - nonlocking stdio functions
flockfile - lock FILE for stdio
fmemopen - open memory as stream
```

```
fopen - stream open functions
fopencookie - opening a custom stream
fprintf - formatted output conversion
fpurge - purge a stream
fputc - output of characters and strings
fputc unlocked - nonlocking stdio functions
fputs - output of characters and strings
fputs unlocked - nonlocking stdio functions
fputwc - write a wide character to a FILE stream
fputwc unlocked - nonlocking stdio functions
fputws unlocked - nonlocking stdio functions
fread - binary stream input/output
fread unlocked - nonlocking stdio functions
freopen - stream open functions
fscanf - input format conversion
fseek - reposition a stream
fseeko - seek to or report file position
fsetpos - reposition a stream
ftell - reposition a stream
ftello - seek to or report file position
ftrylockfile - lock FILE for stdio
funlockfile - lock FILE for stdio
fwprintf - formatted wide-character output conversion
fwrite - binary stream input/output
fwrite unlocked - nonlocking stdio functions
getc - input of characters and strings
getc unlocked - nonlocking stdio functions
getchar - input of characters and strings
getchar unlocked - nonlocking stdio functions
getdelim - delimited string input
getline - delimited string input
getmntent - get filesystem descriptor file entry
getmntent_r - get filesystem descriptor file entry
gets - get a string from standard input (DEPRECATED)
getw - input and output of words (ints)
getwc - read a wide character from a FILE stream
getwc unlocked - nonlocking stdio functions
getwchar_unlocked - nonlocking stdio functions
hasmntopt - get filesystem descriptor file entry
open memstream - open a dynamic memory buffer stream
open_wmemstream - open a dynamic memory buffer stream
pclose - pipe stream to or from a process
perror - print a system error message
```

```
popen - pipe stream to or from a process
printf - formatted output conversion
putc - output of characters and strings
putc unlocked - nonlocking stdio functions
putchar - output of characters and strings
putchar unlocked - nonlocking stdio functions
putpwent - write a password file entry
puts - output of characters and strings
putw - input and output of words (ints)
putwc - write a wide character to a FILE stream
putwc unlocked - nonlocking stdio functions
putwchar unlocked - nonlocking stdio functions
remove - remove a file or directory
rename - change the name or location of a file
renameat - change the name or location of a file
renameat2 - change the name or location of a file
rewind - reposition a stream
scanf - input format conversion
setbuf - stream buffering operations
setbuffer - stream buffering operations
setlinebuf - stream buffering operations
setmntent - get filesystem descriptor file entry
setvbuf - stream buffering operations
snprintf - formatted output conversion
sprintf - formatted output conversion
sscanf - input format conversion
stderr - standard I/O streams
stdin - standard I/O streams
stdio - standard input/output library functions
stdio ext - interfaces to stdio FILE structure
stdout - standard I/O streams
swprintf - formatted wide-character output conversion
sys_errlist - print a system error message
sys nerr - print a system error message
tempnam - create a name for a temporary file
tmpfile - create a temporary file
tmpnam - create a name for a temporary file
tmpnam_r - create a name for a temporary file
ungetc - input of characters and strings
unlocked stdio - nonlocking stdio functions
vasprintf - print to allocated string
vdprintf - formatted output conversion
vfprintf - formatted output conversion
```

```
vfscanf - input format conversion
vfwprintf - formatted wide-character output conversion
vprintf - formatted output conversion
vscanf - input format conversion
vsnprintf - formatted output conversion
vsprintf - formatted output conversion
vsscanf - input format conversion
vsscanf - input format conversion
vswprintf - formatted wide-character output conversion
vwprintf - formatted wide-character output conversion
wprintf - formatted wide-character output conversion
```

### stdlib.h

```
a641 - convert between long and base-64
abort - cause abnormal process termination
abs - compute the absolute value of an integer
aligned alloc - allocate aligned memory
atexit - register a function to be called at normal process ter...
atof - convert a string to a double
atoi - convert a string to an integer
atol - convert a string to an integer
atoll - convert a string to an integer
atoq - convert a string to an integer
bsearch - binary search of a sorted array
calloc - allocate and free dynamic memory
canonicalize file name - return the canonicalized absolute pathname
cfree - free allocated memory
clearenv - clear the environment
div - compute quotient and remainder of an integer division
drand48 - generate uniformly distributed pseudo-random numbers
drand48 r - generate uniformly distributed pseudo-random numbers r...
ecvt - convert a floating-point number to a string
ecvt_r - convert a floating-point number to a string
erand48 - generate uniformly distributed pseudo-random numbers
erand48_r - generate uniformly distributed pseudo-random numbers r...
exit - cause normal process termination
fcvt - convert a floating-point number to a string
fcvt_r - convert a floating-point number to a string
free - allocate and free dynamic memory
gcvt - convert a floating-point number to a string
getenv - get an environment variable
getloadavg - get system load averages
```

```
getpt - open a new pseudoterminal master
getsubopt - parse suboption arguments from a string
grantpt - grant access to the slave pseudoterminal
imaxabs - compute the absolute value of an integer
imaxdiv - compute quotient and remainder of an integer division
initstate - random number generator
initstate r - reentrant random number generator
jrand48 - generate uniformly distributed pseudo-random numbers
jrand48 r - generate uniformly distributed pseudo-random numbers r...
164a - convert between long and base-64
labs - compute the absolute value of an integer
lcong48 - generate uniformly distributed pseudo-random numbers
lcong48 r - generate uniformly distributed pseudo-random numbers r...
ldiv - compute quotient and remainder of an integer division
llabs - compute the absolute value of an integer
1ldiv - compute quotient and remainder of an integer division
1rand48 - generate uniformly distributed pseudo-random numbers
1rand48 r - generate uniformly distributed pseudo-random numbers r...
malloc - allocate and free dynamic memory
MB CUR MAX - maximum length of a multibyte character in the current...
mblen - determine number of bytes in next multibyte character
mbstowcs - convert a multibyte string to a wide-character string
mbtowc - convert a multibyte sequence to a wide character
memalign - allocate aligned memory
mkdtemp - create a unique temporary directory
mkostemp - create a unique temporary file
mkostemps - create a unique temporary file
mkstemp - create a unique temporary file
mkstemps - create a unique temporary file
mktemp - make a unique temporary filename
mrand48 - generate uniformly distributed pseudo-random numbers
mrand48 r - generate uniformly distributed pseudo-random numbers r...
nrand48 - generate uniformly distributed pseudo-random numbers
nrand48 r - generate uniformly distributed pseudo-random numbers r...
on_exit - register a function to be called at normal process ter...
posix_memalign - allocate aligned memory
posix openpt - open a pseudoterminal device
ptsname - get the name of the slave pseudoterminal
ptsname r - get the name of the slave pseudoterminal
putenv - change or add an environment variable
pvalloc - allocate aligned memory
qecvt - convert a floating-point number to a string
gecvt r - convert a floating-point number to a string
```

```
qfcvt - convert a floating-point number to a string
gfcvt r - convert a floating-point number to a string
qgcvt - convert a floating-point number to a string
qsort - sort an array
qsort r - sort an array
rand - pseudo-random number generator
rand_r - pseudo-random number generator
random - random number generator
random r - reentrant random number generator
realloc - allocate and free dynamic memory
reallocarray - allocate and free dynamic memory
rpmatch - determine if the answer to a question is affirmative o...
secure getenv - get an environment variable
seed48 - generate uniformly distributed pseudo-random numbers
seed48_r - generate uniformly distributed pseudo-random numbers r...
setenv - change or add an environment variable
setstate - random number generator
setstate r - reentrant random number generator
srand - pseudo-random number generator
srand48 - generate uniformly distributed pseudo-random numbers
srand48 r - generate uniformly distributed pseudo-random numbers r...
srandom - random number generator
srandom r - reentrant random number generator
strfromd - convert a floating-point value into a string
strfromf - convert a floating-point value into a string
strfroml - convert a floating-point value into a string
strtod - convert ASCII string to floating-point number
strtof - convert ASCII string to floating-point number
strtol - convert a string to a long integer
strtold - convert ASCII string to floating-point number
strtoll - convert a string to a long integer
strtoq - convert a string to a long integer
strtoul - convert a string to an unsigned long integer
strtoull - convert a string to an unsigned long integer
strtouq - convert a string to an unsigned long integer
system - execute a shell command
unlockpt - unlock a pseudoterminal master/slave pair
unsetenv - change or add an environment variable
valloc - allocate aligned memory
wcstombs - convert a wide-character string to a multibyte string
wctomb - convert a wide character to a multibyte sequence
```

## string.h

```
bstring - byte string operations
memccpy - copy memory area
memchr - scan memory for a character
memcmp - compare memory areas
memcpy - copy memory area
memfrob - frobnicate (encrypt) a memory area
memmem - locate a substring
memmove - copy memory area
mempcpy - copy memory area
memrchr - scan memory for a character
memset - fill memory with a constant byte
rawmemchr - scan memory for a character
sigabbrev np - return string describing signal
sigdescr np - return string describing signal
stpcpy - copy a string returning a pointer to its end
stpncpy - copy a fixed-size string, returning a pointer to its end
strcasestr - locate a substring
strcat - concatenate two strings
strchr - locate character in string
strchrnul - locate character in string
strcmp - compare two strings
strcoll - compare two strings using the current locale
strcpy - copy a string
strcspn - get length of a prefix substring
strdup - duplicate a string
strdupa - duplicate a string
strerror - return string describing error number
strerror 1 - return string describing error number
strerror_r - return string describing error number
strerrordesc np - return string describing error number
strerrorname np - return string describing error number
strfry - randomize a string
strlen - calculate the length of a string
strncat - concatenate two strings
strncmp - compare two strings
strncpy - copy a string
strndup - duplicate a string
strndupa - duplicate a string
strnlen - determine the length of a fixed-size string
strpbrk - search a string for any of a set of bytes
```

```
strrchr - locate character in string
strsep - extract token from string
strsignal - return string describing signal
strspn - get length of a prefix substring
strstr - locate a substring
strtok - extract tokens from strings
strtok_r - extract tokens from strings
strverscmp - compare two version strings
strxfrm - string transformation
sys_siglist - return string describing signal
wmempcpy - copy memory area
```

# strings.h

```
bcmp - compare byte sequences
bcopy - copy byte sequence
bzero - zero a byte string
explicit_bzero - zero a byte string
ffs - find first bit set in a word
ffsl - find first bit set in a word
ffsll - find first bit set in a word
index - locate character in string
rindex - locate character in string
strcasecmp - compare two strings ignoring case
string - string operations
strncasecmp - compare two strings ignoring case
```

# sys/ipc.h

```
shmctl - System V shared memory control
shmget - allocates a System V shared memory segment
```

# sys/mman.h

```
madvise - give advice about use of memory
memfd_create - create an anonymous file
mlock - lock and unlock memory
mlock2 - lock and unlock memory
mlockall - lock and unlock memory
mmap - map or unmap files or devices into memory
```

```
mmap2 - map files or devices into memory
mmap64 - map or unmap files or devices into memory
mprotect - set protection on a region of memory
mremap - remap a virtual memory address
msync - synchronize a file with a memory map
munlock - lock and unlock memory
munlockall - lock and unlock memory
munmap - map or unmap files or devices into memory
pkey_alloc - allocate or free a protection key
pkey_free - allocate or free a protection key
pkey_mprotect - set protection on a region of memory
posix_madvise - give advice about patterns of memory usage
remap_file_pages - create a nonlinear file mapping
shm_open - create/open or unlink POSIX shared memory objects
shm unlink - create/open or unlink POSIX shared memory objects
```

# sys/select.h

```
_newselect - synchronous I/O multiplexing
FD_CLR - synchronous I/O multiplexing
FD_ISSET - synchronous I/O multiplexing
FD_SET - synchronous I/O multiplexing
FD_ZERO - synchronous I/O multiplexing
pselect - synchronous I/O multiplexing
pselect6 - synchronous I/O multiplexing
select - synchronous I/O multiplexing
```

# sys/socket.h

```
accept - accept a connection on a socket
accept4 - accept a connection on a socket
address_families - socket address families (domains)
bind - bind a name to a socket
cmsg - access ancillary data
CMSG_ALIGN - access ancillary data
CMSG_DATA - access ancillary data
CMSG_FIRSTHDR - access ancillary data
CMSG_LEN - access ancillary data
CMSG_NXTHDR - access ancillary data
CMSG_SPACE - access ancillary data
connect - initiate a connection on a socket
```

```
ddp - Linux AppleTalk protocol implementation
getnameinfo - address-to-name translation in protocol-independent ma...
getpeername - get name of connected peer socket
getsockname - get socket name
getsockopt - get and set options on sockets
inet - Internet address manipulation routines
inet addr - Internet address manipulation routines
inet aton - Internet address manipulation routines
inet lnaof - Internet address manipulation routines
inet makeaddr - Internet address manipulation routines
inet netof - Internet address manipulation routines
inet network - Internet address manipulation routines
inet ntoa - Internet address manipulation routines
ip - Linux IPv4 protocol implementation
ipv6 - Linux IPv6 protocol implementation
listen - listen for connections on a socket
packet - packet interface on device level
raw - Linux IPv4 raw sockets
setsockopt - get and set options on sockets
shutdown - shut down part of a full-duplex connection
sock diag - obtaining information about sockets
sockatmark - determine whether socket is at out-of-band mark
socket - create an endpoint for communication
socket - Linux socket interface
socketpair - create a pair of connected sockets
tcp - TCP protocol
udp - User Datagram Protocol for IPv4
udplite - Lightweight User Datagram Protocol
unix - sockets for local interprocess communication
vsock - Linux VSOCK address family
x25 - ITU-T X.25 / ISO-8208 protocol interface
```

# sys/stat.h

```
chmod - change permissions of a file
fchmod - change permissions of a file
fchmodat - change permissions of a file
isfdtype - test file type of a file descriptor
mkdir - create a directory
mkdirat - create a directory
```

# sys/statvfs.h

```
fstatvfs - get filesystem statistics
statvfs - get filesystem statistics
```

# sys/time.h

```
adjtime - correct the time to synchronize the system clock
futimes - change file timestamps
getitimer - get or set value of an interval timer
getpriority - get/set program scheduling priority
getrlimit - get/set resource limits
getrusage - get resource usage
gettimeofday - get / set time
lutimes - change file timestamps
prlimit - get/set resource limits
prlimit64 - get/set resource limits
setitimer - get or set value of an interval timer
setpriority - get/set program scheduling priority
setrlimit - get/set resource limits
settimeofday - get / set time
timeradd - timeval operations
timerclear - timeval operations
timercmp - timeval operations
timerisset - timeval operations
timersub - timeval operations
ugetrlimit - get/set resource limits
vlimit - get/set resource limits
vtimes - get resource usage
```

# sys/times.h

```
times - get process times
```

# sys/types.h

```
_llseek - reposition read/write file offset
add_key - add a key to the kernel's key management facility
```

```
bindresvport - bind a socket to a privileged IP port
closedir - close a directory
creat - open and possibly create a file
db - database access methods
dbopen - database access methods
dirfd - get directory stream file descriptor
endgrent - get group file entry
endpwent - get password file entry
fdopendir - open a directory
fgetxattr - retrieve an extended attribute value
flistxattr - list extended attribute names
fork - create a child process
freeaddrinfo - network address and service translation
freehostent - get network hostnames and addresses
freeifaddrs - get interface addresses
fremovexattr - remove an extended attribute
fsetxattr - set an extended attribute value
fstat - get file status
fstat64 - get file status
fstatat - get file status
fstatat64 - get file status
ftok - convert a pathname and a project identifier to a Syste...
fts - traverse a file hierarchy
fts children - traverse a file hierarchy
fts close - traverse a file hierarchy
fts_open - traverse a file hierarchy
fts read - traverse a file hierarchy
fts set - traverse a file hierarchy
gai strerror - network address and service translation
getaddrinfo - network address and service translation
getgrent - get group file entry
getgrgid - get group file entry
getgrgid_r - get group file entry
getgrnam - get group file entry
getgrnam_r - get group file entry
getgroups - get/set list of supplementary group IDs
getgroups32 - get/set list of supplementary group IDs
getifaddrs - get interface addresses
getipnodebyaddr - get network hostnames and addresses
getipnodebyname - get network hostnames and addresses
getpgid - set/get process group
getpgrp - set/get process group
getpid - get process identification
```

```
getppid - get process identification
getpw - reconstruct password line entry
getpwent - get password file entry
getpwnam - get password file entry
getpwnam r - get password file entry
getpwuid - get password file entry
getpwuid_r - get password file entry
getsid - get session ID
getumask - get file creation mask
getxattr - retrieve an extended attribute value
initgroups - initialize the supplementary group access list
keyctl - manipulate the kernel's key management facility
kill - send signal to a process
lgetxattr - retrieve an extended attribute value
listxattr - list extended attribute names
llistxattr - list extended attribute names
llseek - reposition read/write file offset
lremovexattr - remove an extended attribute
lseek - reposition read/write file offset
lseek64 - reposition 64-bit read/write file offset
lsetxattr - set an extended attribute value
lstat - get file status
lstat64 - get file status
mkfifo - make a FIFO special file (a named pipe)
mkfifoat - make a FIFO special file (a named pipe)
mknod - create a special or ordinary file
mknodat - create a special or ordinary file
modify ldt - get or set a per-process LDT entry
mq getsetattr - get/set message queue attributes
msgctl - System V message control operations
msgget - get a System V message queue identifier
msgop - System V message queue operations
msgrcv - System V message queue operations
msgsnd - System V message queue operations
name_to_handle_at - obtain handle for a pathname and open file via a handle
newfstatat - get file status
oldfstat - get file status
oldlstat - get file status
oldstat - get file status
open - open and possibly create a file
open_by_handle_at - obtain handle for a pathname and open file via a handle
openat - open and possibly create a file
openat2 - open and possibly create a file (extended)
```

```
opendir - open a directory
pidfd_open - obtain a file descriptor that refers to a process
re comp - BSD regex functions
re exec - BSD regex functions
recv - receive a message from a socket
recvfrom - receive a message from a socket
recvmsg - receive a message from a socket
removexattr - remove an extended attribute
request key - request a key from the kernel's key management facility
rewinddir - reset directory stream
semctl - System V semaphore control operations
semget - get a System V semaphore set identifier
semop - System V semaphore operations
semtimedop - System V semaphore operations
send - send a message on a socket
sendmsg - send a message on a socket
sendto - send a message on a socket
setegid - set effective user or group ID
seteuid - set effective user or group ID
setgid - set group identity
setgid32 - set group identity
setgrent - get group file entry
setgroups - get/set list of supplementary group IDs
setgroups32 - get/set list of supplementary group IDs
setpgid - set/get process group
setpgrp - set/get process group
setpwent - get password file entry
setregid - set real and/or effective user or group ID
setregid32 - set real and/or effective user or group ID
setreuid - set real and/or effective user or group ID
setreuid32 - set real and/or effective user or group ID
setsid - creates a session and sets the process group ID
setuid - set user identity
setuid32 - set user identity
setxattr - set an extended attribute value
shmat - System V shared memory operations
shmdt - System V shared memory operations
shmop - System V shared memory operations
spu_create - create a new spu context
stat - get file status
stat64 - get file status
statx - get file status (extended)
umask - set file mode creation mask
```

```
userfaultfd - create a file descriptor for handling page faults in u...
ustat - get filesystem statistics
utime - change file last access and modification times
utimes - change file last access and modification times
vfork - create a child process and block parent
wait - wait for process to change state
wait3 - wait for process to change state, BSD style
wait4 - wait for process to change state, BSD style
waitid - wait for process to change state
waitpid - wait for process to change state
```

# sys/uio.h

```
preadv - read or write data into multiple buffers
preadv2 - read or write data into multiple buffers
process_vm_readv - transfer data between process address spaces
process_vm_writev - transfer data between process address spaces
pwritev - read or write data into multiple buffers
pwritev2 - read or write data into multiple buffers
readv - read or write data into multiple buffers
writev - read or write data into multiple buffers
```

# sys/utsname.h

```
oldolduname - get name and information about current kernel
olduname - get name and information about current kernel
uname - get name and information about current kernel
```

# syslog.h

```
closelog - send messages to the system logger
openlog - send messages to the system logger
setlogmask - set log priority mask
syslog - read and/or clear kernel message ring buffer; set cons...
vsyslog - send messages to the system logger
```

### termios.h

```
cfgetispeed - get and set terminal attributes, line control, get and...
```

```
cfgetospeed - get and set terminal attributes, line control, get and...
cfmakeraw - get and set terminal attributes, line control, get and...
cfsetispeed - get and set terminal attributes, line control, get and...
cfsetospeed - get and set terminal attributes, line control, get and...
cfsetspeed - get and set terminal attributes, line control, get and...
ioctl_tty - ioctls for terminals and serial lines
tcdrain - get and set terminal attributes, line control, get and...
tcflow - get and set terminal attributes, line control, get and...
tcflush - get and set terminal attributes, line control, get and...
tcgetattr - get and set terminal attributes, line control, get and...
tcgetsid - get session ID
tcsendbreak - get and set terminal attributes, line control, get and...
tcsetattr - get and set terminal attributes, line control, get and...
tcrmios - get and set terminal attributes, line control, get and...
tty ioctl - ioctls for terminals and serial lines
```

#### time.h

```
asctime - transform date and time to broken-down time or ASCII
asctime r - transform date and time to broken-down time or ASCII
clock - determine processor time
clock getcpuclockid - obtain ID of a process CPU-time clock
clock getres - clock and time functions
clock gettime - clock and time functions
clock nanosleep - high-resolution sleep with specifiable clock
clock settime - clock and time functions
ctime - transform date and time to broken-down time or ASCII
ctime r - transform date and time to broken-down time or ASCII
daylight - initialize time conversion information
difftime - calculate time difference
dysize - get number of days for a given year
getdate - convert a date-plus-time string to broken-down time
getdate err - convert a date-plus-time string to broken-down time
getdate r - convert a date-plus-time string to broken-down time
gmtime - transform date and time to broken-down time or ASCII
gmtime r - transform date and time to broken-down time or ASCII
localtime - transform date and time to broken-down time or ASCII
localtime r - transform date and time to broken-down time or ASCII
mktime - transform date and time to broken-down time or ASCII
nanosleep - high-resolution sleep
stime - set time
strftime - format date and time
```

```
strptime - convert a string representation of time to a time tm s...
time - get time in seconds
timegm - inverses of gmtime and localtime
timelocal - inverses of gmtime and localtime
timer_delete - delete a POSIX per-process timer
timer_getoverrun - get overrun count for a POSIX per-process timer
timer_gettime - arm/disarm and fetch state of POSIX per-process timer
timer_settime - arm/disarm and fetch state of POSIX per-process timer
timezone - initialize time conversion information
tzname - initialize time conversion information
```

### ulimit.h

ulimit - get and set user limits

### unistd.h

```
Exit - terminate the calling process
exit - terminate the calling process
sysctl - read/write system parameters
access - check user's permissions for a file
acct - switch process accounting on or off
alarm - set an alarm clock for delivery of a signal
brk - change data segment size
chdir - change working directory
chown - change ownership of a file
chown32 - change ownership of a file
chroot - change root directory
close - close a file descriptor
confstr - get configuration dependent string variables
copy_file_range - Copy a range of data from one file to another
cuserid - get username
daemon - run in the background
dup - duplicate a file descriptor
dup2 - duplicate a file descriptor
dup3 - duplicate a file descriptor
eaccess - check effective user's permissions for a file
encrypt - encrypt 64-bit messages
encrypt_r - encrypt 64-bit messages
endusershell - get permitted user shells
```

```
euidaccess - check effective user's permissions for a file
exec - execute a file
execl - execute a file
execle - execute a file
execlp - execute a file
execv - execute a file
execve - execute program
execveat - execute program relative to a directory file descriptor
execvp - execute a file
execvpe - execute a file
exit - terminate the calling process
faccessat - check user's permissions for a file
faccessat2 - check user's permissions for a file
fchdir - change working directory
fchown - change ownership of a file
fchown32 - change ownership of a file
fchownat - change ownership of a file
fcntl - manipulate file descriptor
fcnt164 - manipulate file descriptor
fdatasync - synchronize a file's in-core state with storage device
fexecve - execute program specified via file descriptor
fpathconf - get configuration values for files
fsync - synchronize a file's in-core state with storage device
ftruncate - truncate a file to a specified length
ftruncate64 - truncate a file to a specified length
get current dir name - get current working directory
getcwd - get current working directory
getcwd - get current working directory
getdomainname - get/set NIS domain name
getdtablesize - get file descriptor table size
getegid - get group identity
getegid32 - get group identity
getentropy - fill a buffer with random bytes
geteuid - get user identity
geteuid32 - get user identity
getgid - get group identity
getgid32 - get group identity
gethostid - get or set the unique identifier of the current host
gethostname - get/set hostname
getlogin - get username
getlogin_r - get username
getopt - Parse command-line options
getopt long - Parse command-line options
```

```
getopt_long_only - Parse command-line options
getpagesize - get memory page size
getpass - get a password
getresgid - get real, effective and saved user/group IDs
getresgid32 - get real, effective and saved user/group IDs
getresuid - get real, effective and saved user/group IDs
getresuid32 - get real, effective and saved user/group IDs
gettid - get thread identification
getuid - get user identity
getuid32 - get user identity
getusershell - get permitted user shells
getwd - get current working directory
group member - test whether a process is in a group
idle - make process 0 idle
isatty - test whether a file descriptor refers to a terminal
lchown - change ownership of a file
lchown32 - change ownership of a file
link - make a new name for a file
linkat - make a new name for a file
lockf - apply, test or remove a POSIX lock on an open file
mincore - determine whether pages are resident in memory
nice - change process priority
optarg - Parse command-line options
opterr - Parse command-line options
optind - Parse command-line options
optopt - Parse command-line options
pathconf - get configuration values for files
pause - wait for signal
pipe - create pipe
pipe2 - create pipe
pread - read from or write to a file descriptor at a given offset
pread64 - read from or write to a file descriptor at a given offset
profil - execution time profile
pwrite - read from or write to a file descriptor at a given offset
pwrite64 - read from or write to a file descriptor at a given offset
read - read from a file descriptor
readlink - read value of a symbolic link
readlinkat - read value of a symbolic link
reboot - reboot or enable/disable Ctrl-Alt-Del
rmdir - delete a directory
sbrk - change data segment size
setdomainname - get/set NIS domain name
sethostid - get or set the unique identifier of the current host
```

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```
sethostname - get/set hostname
setkey - encrypt 64-bit messages
setkey r - encrypt 64-bit messages
setresgid - set real, effective and saved user or group ID
setresgid32 - set real, effective and saved user or group ID
setresuid - set real, effective and saved user or group ID
setresuid32 - set real, effective and saved user or group ID
setup - setup devices and filesystems, mount root filesystem
setusershell - get permitted user shells
sleep - sleep for a specified number of seconds
swab - swap adjacent bytes
swapoff - start/stop swapping to file/device
swapon - start/stop swapping to file/device
symlink - make a new name for a file
symlinkat - make a new name for a file
sync - commit filesystem caches to disk
syncfs - commit filesystem caches to disk
syscall - indirect system call
sysconf - get configuration information at run time
sysctl - read/write system parameters
tcgetpgrp - get and set terminal foreground process group
tcsetpgrp - get and set terminal foreground process group
truncate - truncate a file to a specified length
truncate64 - truncate a file to a specified length
ttyname - return name of a terminal
ttyname r - return name of a terminal
ualarm - schedule signal after given number of microseconds
unlink - delete a name and possibly the file it refers to
unlinkat - delete a name and possibly the file it refers to
uselib - load shared library
usleep - suspend execution for microsecond intervals
vhangup - virtually hangup the current terminal
write - write to a file descriptor
```

# utmpx.h

```
getutmp - copy utmp structure to utmpx, and vice versa
getutmpx - copy utmp structure to utmpx, and vice versa
```

#### wchar, h

```
btowc - convert single byte to wide character
fgetws - read a wide-character string from a FILE stream
fputws - write a wide-character string to a FILE stream
fwide - set and determine the orientation of a FILE stream
getwchar - read a wide character from standard input
mbrlen - determine number of bytes in next multibyte character
mbrtowc - convert a multibyte sequence to a wide character
mbsinit - test for initial shift state
mbsnrtowcs - convert a multibyte string to a wide-character string
mbsrtowcs - convert a multibyte string to a wide-character string
putwchar - write a wide character to standard output
ungetwc - push back a wide character onto a FILE stream
wcpcpy - copy a wide-character string, returning a pointer to i...
wcpncpy - copy a fixed-size string of wide characters, returning...
wcrtomb - convert a wide character to a multibyte sequence
wcscasecmp - compare two wide-character strings, ignoring case
wcscat - concatenate two wide-character strings
wcschr - search a wide character in a wide-character string
wcscmp - compare two wide-character strings
wcscpy - copy a wide-character string
wcscspn - search a wide-character string for any of a set of wid...
wcsdup - duplicate a wide-character string
wcslen - determine the length of a wide-character string
wcsncasecmp - compare two fixed-size wide-character strings, ignorin...
wcsncat - concatenate two wide-character strings
wcsncmp - compare two fixed-size wide-character strings
wcsncpy - copy a fixed-size string of wide characters
wcsnlen - determine the length of a fixed-size wide-character st...
wcsnrtombs - convert a wide-character string to a multibyte string
wcspbrk - search a wide-character string for any of a set of wid...
wcsrchr - search a wide character in a wide-character string
wcsrtombs - convert a wide-character string to a multibyte string
wcsspn - advance in a wide-character string, skipping any of a ...
wcsstr - locate a substring in a wide-character string
wcstok - split wide-character string into tokens
wcswidth - determine columns needed for a fixed-size wide-charact...
wctob - try to represent a wide character as a single byte
wcwidth - determine columns needed for a wide character
wmemchr - search a wide character in a wide-character array
wmemcmp - compare two arrays of wide-characters
wmemcpy - copy an array of wide-characters
wmemmove - copy an array of wide-characters
wmemset - fill an array of wide-characters with a constant wide ...
```

### wctype.h

```
iswalnum - test for alphanumeric wide character
iswalpha - test for alphabetic wide character
iswblank - test for whitespace wide character
iswcntrl - test for control wide character
iswctvpe - wide-character classification
iswdigit - test for decimal digit wide character
iswgraph - test for graphic wide character
iswlower - test for lowercase wide character
iswprint - test for printing wide character
iswpunct - test for punctuation or symbolic wide character
iswspace - test for whitespace wide character
iswupper - test for uppercase wide character
iswxdigit - test for hexadecimal digit wide character
towctrans - wide-character transliteration
towlower - convert a wide character to lowercase
towlower 1 - convert a wide character to lowercase
towupper - convert a wide character to uppercase
towupper 1 - convert a wide character to uppercase
wctrans - wide-character translation mapping
wctype - wide-character classification
```

# wordexp.h

```
wordexp - perform word expansion like a posix-shell
wordfree - perform word expansion like a posix-shell
```