NAME

scandir, **scandirat**, **scandir_b**, **alphasort**, **versionsort** - scan a directory

LIBRARY

Standard C Library (libc, -lc)

SYNOPSIS

#include <dirent.h>

int
scandir(*const char *dirname, struct dirent ***namelist, int (*select)(const struct dirent *), int (*compar)(const struct dirent **, const struct dirent **)*);

int
scandirat(*int dirfd, const char *dirname, struct dirent ***namelist, int (*select)(const struct dirent *), int (*compar)(const struct dirent **, const struct dirent **)*);

int
scandir_b(*const char *dirname, struct dirent ***namelist, int (^select)(const struct dirent *), int (^compar)(const struct dirent **, const struct dirent **)*);

int
alphasort(*const struct dirent **d1, const struct dirent **d2*);

int
versionsort(*const struct dirent **d1, const struct dirent **d2*);

DESCRIPTION

The **scandir**() function reads the directory *dirname* and builds an array of pointers to directory entries using malloc(3). It returns the number of entries in the array. A pointer to the array of directory entries is stored in the location referenced by *namelist*.

The *select* argument is a pointer to a user supplied subroutine which is called by **scandir**() to select which entries are to be included in the array. The select routine is passed a pointer to a directory entry and should return a non-zero value if the directory entry is to be included in the array. If *select* is null, then all the directory entries will be included.

The *compar* argument is a pointer to a user supplied subroutine which is passed to qsort(3) to sort the completed array. If this pointer is null, the array is not sorted.

The **alphasort**() function is a routine which can be used for the *compar* argument to sort the array alphabetically using strcoll(3).

The **versionsort**() function is a routine which can be used for the *compar* argument to sort the array naturally using strverscmp(3).

The memory allocated for the array can be deallocated with free(3), by freeing each pointer in the array and then the array itself.

The **scandirat**() function is similar to **scandir**(), but takes an additional *dirfd* argument. If the supplied *dirname* is absolute, the function's behavior is identical to that of **scandir**(), the *dirfd* argument is unused. If *dirname* is relative, *dirfd* must be a valid file descriptor referencing a directory, in which case the *dirname* lookup is performed relative to the directory referenced by *dirfd*. If *dirfd* has the special value *AT_FDCWD*, then the current process directory is used as the base for relative lookups. See openat(2) for additional details.

The **scandir_b**() function behaves in the same way as **scandir**(), but takes blocks as arguments instead of function pointers and calls **qsort_b**() rather than **qsort**().

DIAGNOSTICS

Returns -1 if the directory cannot be opened for reading or if malloc(3) cannot allocate enough memory to hold all the data structures.

SEE ALSO

openat(2), directory(3), malloc(3), qsort(3), strcoll(3), strverscmp(3), dir(5)

STANDARDS

The **versionsort**() function is a GNU extension and conforms to no standard.

HISTORY

The **scandir**() and **alphasort**() functions appeared in 4.2BSD. The **scandirat**() and **versionsort**() functions were added in FreeBSD 13.2.