【Linux Programming】Day15

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【Ch3】Work with Files

3.7 Scanning Directories

The directory functions are declared in a header file `dirent.h`. They use a structure, `DIR`, as a basis for directory manipulation.

A pointer to this structure, called a directory stream(a `DIR *`), acts in much the same way as a file stream(`FILE *`) does for regular file manipulation.

3.7.1 opendir

The `opendir` function opens a directory and establishes a directory stream.
If successful, it returns a pointer to a DIR structure to be used for reading directory entries:

```
#include <sys/types.h>
#include <dirent.h>

DIR *opendir(const char *name);
```

`opendir` returns a null pointer on failure.

Note: A directory stream uses a low-level file descriptor to access the directory itself, so opendir could fail with too many open files.

3.7.2 readdir

The `readdir` function returns a pointer to a structure detailing the next directory entry in the directory stream `dirp`.

Successive calls return further directory entries. On error, and at the end of the directory, `readdir` returns `NULL` .

```
#include <sys/types.h>
#include <dirent.h>

struct dirent *readdir(DIR *dirp);
```

3.7.3 telldir

The `telldir` function returns a value that records the current position in a directory stream. We can use this in subsequent calls to `seekdir` to reset a directory scan to the current position.

```
#include <sys/types.h>
#include <dirent.h>

long int telldir(DIR *dirp);
```

3.7.4 seekdir

The `seekdir` function sets the directory entry pointer in the directory stream given by `dirp` . The value of `loc,` used to set the position, should have been obtained from a prior call to `telldir` .

```
#include <sys/types.h>
#include <dirent.h>

void seekdir(DIR *dirp, long int loc);
```

3.7.5 closedir
The closedir function closes a directory stream and frees up the resources associated with it.

It returns 0 on success and -1 if there is an error.

```
#include <sys/types.h>
#include <dirent.h>

int closedir(DIR *dirp);
```