

# An introduction to filesystem

August 25, 2015

# Filesystem

“In computing, a file system (or filesystem) is used to control how data is stored and retrieved“

*[https://en.wikipedia.org/wiki/File\\_system](https://en.wikipedia.org/wiki/File_system)*

# File System

Files and directories

- ▶ The file system controls how to read/write data to disk.
- ▶ Separation of data in to pieces with easily remembered names - files or directories

# File System

## Directory

Provides a way to store files (and other directories).  
Imagine having all your files in one place. Just like having all your papers on the floor. Better to use a book shelf.

# File System

Services offered by the OS

- ▶ Create
- ▶ Delete
- ▶ Change access permission
- ▶ Read
- ▶ Write
- ▶ Open and close

# Filesystem

“There are many different kinds of file systems. Each one has different structure and logic, properties of speed, flexibility, security, size and more.”

*[https://en.wikipedia.org/wiki/File\\_system](https://en.wikipedia.org/wiki/File_system)*

# Filesystem examples

- ▶ ext\*, XFS, JFS, ReiserFS and btrfs ... (GNU/Linux)
- ▶ HFS Plus, UFS (MacOS)
- ▶ FAT, NTFS, exFAT, Live File System and ReFS (Windows)
- ▶ ...

# Directory

“File systems typically have directories (also called folders) which allow the user to group files into separate collections.”

*[https://en.wikipedia.org/wiki/File\\_system](https://en.wikipedia.org/wiki/File_system)*



# File

“A computer file is a resource for storing information, which is available to a computer program and is usually based on some kind of durable storage.”

*[https://en.wikipedia.org/wiki/Computer\\_file](https://en.wikipedia.org/wiki/Computer_file)*