# The Seven Fundamental Filetypes of Linux and Unix

Below are the seven fundamental filetypes in Linux. You should already know about the two basic filetypes. i.e. regular file, and directory. We will discuss remaining filetypes in detail.

- : regular file
**d** : directory
**l** : symbolic link
**b** : block special file
**c** : character special file
**p** : named pipe
**s** : socket

## Explained in detail

**l** symbolic link (or symlink): is a file that points to another file. That is, when you read from the symbolic link using, perhaps, the cat or less command, you will actually receive the contents of the underlying file. Most actions, in fact, will be performed on the underlying file, with the exception of the rm command. Removing a symlink removes the actual link itself, not the underlying file.

**c** character special file: as we know that everything in Linux is a file, even hardware. Files referencing hardware are not regular files; they are one of two types of special files. Character special files are used to communicate with hardware one character at a time.

**b** block special file: used to communicate with hardware a block of data at a time: 512 bytes, 1024 bytes, 2048 bytes. whatever is appropriate for that type of hardware. Generally, block and character special files are located in the /dev directory.

**p** named pipe: a file that passes data between processes. It stores no data itself, but passes data between one process writing data into the named pipe and another process reading data from the named pipe. A named pipe can be created using the mknod command. type *man mknod* to read manual of this command.

**s** socket: a stylized mechanism for inter-process communications. It is extremely rare for a user or even a system administrator to explicitly create a socket.

```
[jpandya@localhost filetypes]$ pwd
/home/jpandya/temp/filetypes
[jpandya@localhost filetypes]$ ls -l
total 24
lrwxrwxrwx 1 jpandya jpandya   37 Sep  1 10:09 elcp -> /home/jpandya/MyCourses/ELCP_2015_16/
prw-rw-r-- 1 jpandya jpandya    0 Sep  1 10:09 mycommpipe
drwxrwxr-x 2 jpandya jpandya 4096 Sep  1 10:08 mydir
-rw-rw-r-- 1 jpandya jpandya    6 Sep  1 10:08 regular.txt
[jpandya@localhost filetypes]$ ls -l /dev/ | grep c*tty*  | head -n 2
crw-rw-rw- 1 root    tty       5,    2 Sep  1 13:18 ptmx
crw------- 1 root    root      4,    0 Sep  1  2015 systty
[jpandya@localhost filetypes]$ ls -l /dev/ | grep ^b  | head -n 2
brw-r----- 1 root    disk      7,    0 Sep  1 09:11 loop0
brw-r----- 1 root    disk      7,    1 Sep  1 09:11 loop1
[jpandya@localhost filetypes]$
```