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| dau_logb | **ITEC 202 – Operating Systems** |  |
| *Ubuntu/Linux Filesystem Overview* |

**Linux Filesystem**

Ubuntu (like all UNIX-like systems) organizes files in a hierarchical tree, where relationships are thought of in teams of children and parent. Directories can contain other directories as well as regular files, which are the "leaves" of the tree. Any element of the tree can be references by a path name; an absolute path name starts with the character **/** (identifying the root directory, which contains all other directories and files), then every child directory that must be traversed to reach the element is listed, each separated by a **/** sign.

A relative path name is one that doesn't start with **/**; in that case, the directory tree is traversed starting from a given point, which changes depending on context, called the current directory. In every directory, there are two special directories called **.** and **..**, which refer respectively to the directory itself, and to its parent directory.

**Main directories**

The standard Ubuntu directory structure mostly follows the Filesystem Hierarchy Standard, which can be referred to for more detailed information. Here, only the most important directories in the system will be presented.

**/bin** is a place for most commonly used terminal commands, like ls, mount, rm, etc.

**/boot** contains files needed to start up the system, including the Linux kernel, a RAM disk image and bootloader configuration files.

**/dev** contains all device files, which are not regular files but instead refer to various hardware devices on the system, including hard drives.

**/etc** contains system-global configuration files, which affect the system's behavior for all users.

**/home** this is the place for users' home directories.

**/lib** contains very important dynamic libraries and kernel modules

**/media** is intended as a mount point for external devices, such as hard drives or removable media (floppies, CDs, DVDs).

**/mnt** is also a place for mount points, but dedicated specifically to "temporarily mounted" devices, such as network filesystems.

**/opt** can be used to store addition software for your system, which is not handled by the package manager.

**/proc** is a virtual filesystem that provides a mechanism for kernel to send information to processes.

**/root** is the superuser's home directory, not in /home/ to allow for booting the system even if /home/ is not available.

**/sbin** contains important administrative commands that should generally only be employed by the superuser.

**/srv** can contain data directories of services such as HTTP (/srv/www/) or FTP.

**/sys** is a virtual filesystem that can be accessed to set or obtain information about the kernel's view of the system.

**/tmp** is a place for temporary files used by applications.

**/usr** contains the majority of user utilities and applications, and partly replicates the root directory structure, containing for instance, among others, /usr/bin/ and /usr/lib.

**/var** is dedicated variable data that potentially changes rapidly; a notable directory it contains is /var/log where system log files are kept.