Filesystems

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And (names of) directories can be collected in other directories and so on until we get to the top of the hierarchy, the *root*

Filesystems

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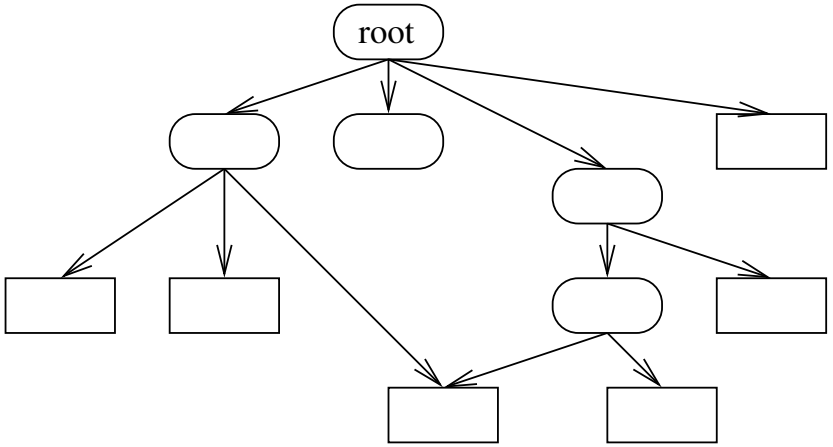

Files can appear at all levels

Filesystems

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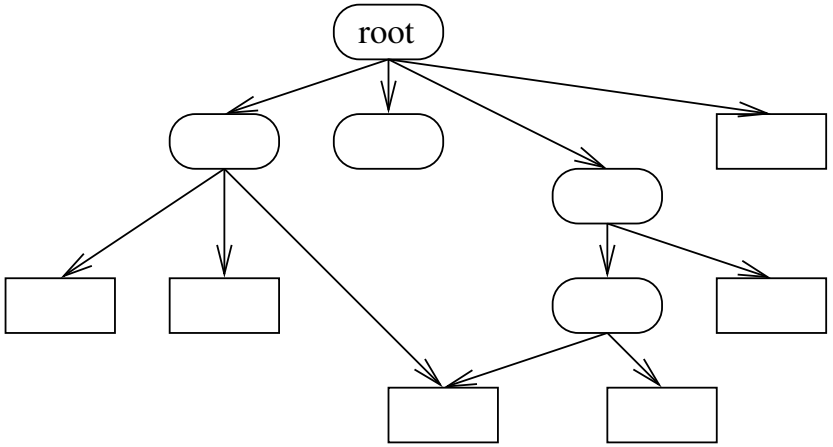

But always within a directory

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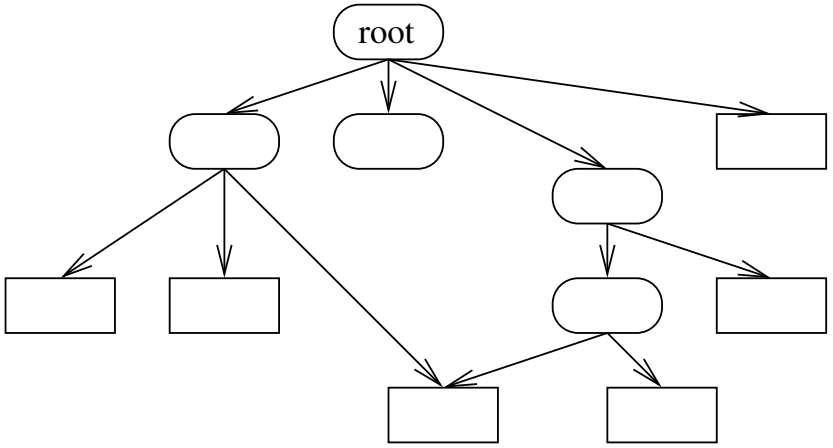

In some systems, a file can be in more than one directory

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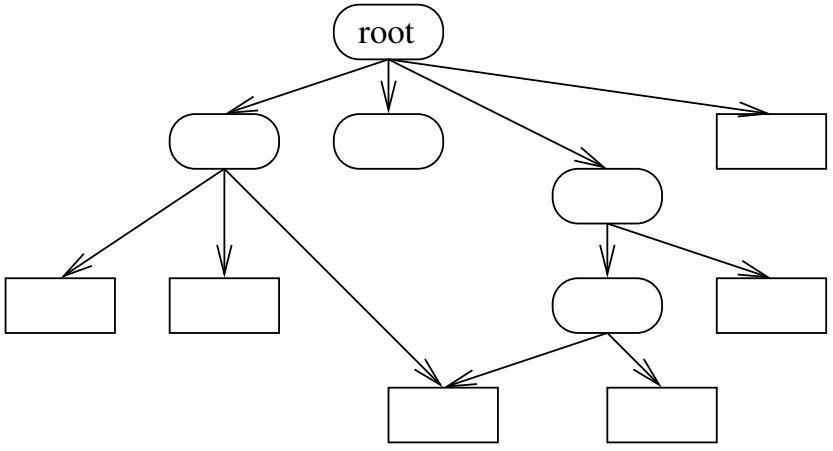

Generally, directories can only be within exactly *one* directory, for implementation reasons

Filesystems

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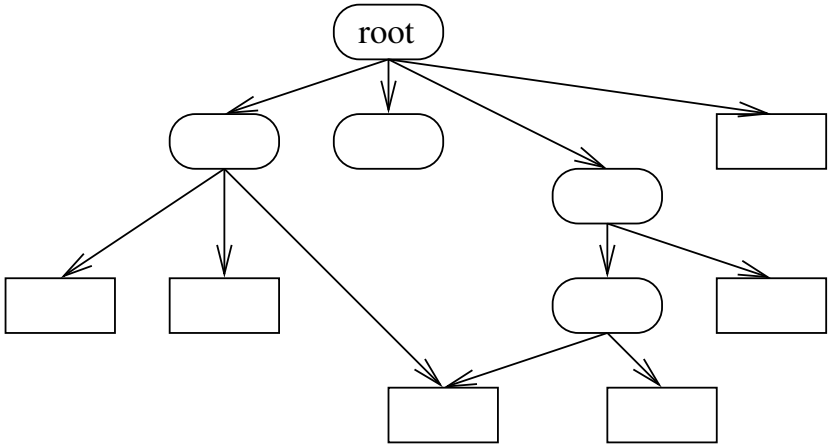

Directories can be empty

Filesystems

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Files can have multiple names: we might find that `/usr/local/bin/dir` refers to the same file as `/usr/bin/ls`

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This is a tradeoff of flexibility vs. ease of system implementation

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With a cwd of `/u/cs/1/cs1def` a process that asks for file `prog.c` gets file `/u/cs/1/cs1def/prog.c`

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The cwd is a convenience for the programmer and may be changed as often as you like (`cd`, `chdir`)