Listing Files

And Understanding `ls` Output

What You Will Learn

- What the long listing format components are.

- How to see hidden files and directories.

- How to list files by type.

- How to list files sorted by time.

- How to handle spaces in file names.

- What symbolic links are.

Decoding `ls -l` Output

```
$ ls -l
 -rw-rw-r-- 1 jason users 10400 Sep 27 08:52 sales.data
```

Permissions	-rw-rw-r--
Number of links	1
Owner name	jason
Group name	users
Number of bytes in the file	10400
Last modification time	Sep 27 08:52
File name	sales.data

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Listing All Files, Including Hidden Files

- Hidden files begin with a period.
    - Sometimes called "dot files."
- Hidden files are not displayed by default.
- To show hidden files with `ls`, use `ls -a`.
- Command options can be combined.
    - `ls -l -a` is the same as `ls -la` and `ls -al`.

Listing Files by Type

Use `ls -F` to reveal file types.

/	Directory
@	Link
*	Executable

Symbolic Links

- A link is a points to the actual file or directory.

- Use the link as if it were the file.

- A link can be used to create a shortcut.
  - Use for long file or directory names.
  - Use to indicate the current version of software.

Listing Files by Time and in Reverse

`ls -t`　　　List files by time.

`ls -r`　　　Reverse order.

`ls -latr`　　Long listing including all files
　　　　　　reverse sorted by time.

Listing Files Recursively

`ls -R`   Lists files recursively

The `tree` Command

Similar to `ls -R`, but creates visual output.

`tree -d`   List directories only.

`tree -C`   Colorize output.

List Directories, Not Contents

`ls -d`   List directory name, not contents.

Listing Files with Color

`ls --color` Colorize the output.

Working with Spaces in Names

- Just say no to spaces!
- Alternatives:
  - Hyphens (-)
  - Underscores (_)
  - CamelCase

Working with Spaces in Names

- Encapsulate the entire file name in quotes.
- Use a backslash (\) to escape spaces.

Summary

- Useful `ls` options
- Symbolic links
- Hidden files and directories
- Spaces in file names

`ls` Options

`-a`	List all files, including hidden files.
`--color`	List files with colorized output.
`-d`	List directory names, not contents.
`-l`	Use the long listing format.
`-r`	Reverse the order.
`-R`	List files recursively.
`-t`	Sort by time, most recent first.