


# I CLI Command Cheatsheet (Lecture 4 & 5)

## ◆ Navigation Commands

Command	Description	Example
<code>pwd</code>	Show <b>present working directory</b>	<code>pwd</code>
<code>ls</code>	List files/folders in current directory	<code>ls</code>
<code>ls -a</code>	Show <b>all files</b> (including hidden)	<code>ls -a</code>
<code>ls -l</code>	Show detailed list (permissions, size, owner)	<code>ls -l</code>
<code>ls -la</code>	Combine: detailed + hidden files	<code>ls -la</code>
<code>cd &lt;dir&gt;</code>	Change directory	<code>cd Documents</code>
<code>cd ..</code>	Move up one level	<code>cd ..</code>
<code>cd ~</code>	Go to home directory	<code>cd ~</code>
<code>cd /</code>	Go to root directory	<code>cd /</code>

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## ◆ File & Folder Management

Command	Description	Example
<code>touch &lt;file&gt;</code>	Create empty file	<code>touch notes.txt</code>
<code>mkdir &lt;dir&gt;</code>	Create new folder	<code>mkdir projects</code>
<code>mkdir -p a/b/c</code>	Create nested folders	<code>mkdir -p web/css/js</code>  Creates web → inside it css → inside it js

		<pre>mkdir -p school/{notes,assignments}</pre> <p>📁 Creates school/notes and school/assignments (sibling folders)</p>
<pre>rm &lt;file&gt;</pre>	Delete file	<pre>rm old.txt</pre>
<pre>rm -i &lt;file&gt;</pre>	Delete with confirmation	<pre>rm -i danger.txt</pre>
<pre>rm -r &lt;dir&gt;</pre>	Delete folder + contents	<pre>rm -r temp/</pre>

## ◆ Viewing & Editing Files

Command	Description	Example
<pre>cat &lt;file&gt;</pre>	Show file contents	<pre>cat notes.txt</pre>
<pre>less &lt;file&gt;</pre>	View long files with scroll (q = quit)	<pre>less bigfile.txt</pre>
<pre>echo "text" &gt; file.txt</pre>	Write text into file (overwrite)	<pre>echo "Hello" &gt; msg.txt</pre>
<pre>echo "more" &gt;&gt; file.txt</pre>	Append text to file	<pre>echo "World" &gt;&gt; msg.txt</pre>

## ◆ File Operations

Command	Description	Example
<pre>cp &lt;src&gt; &lt;dest&gt;</pre>	Copy file	<pre>cp file.txt backup.txt</pre>
<pre>cp -r &lt;dir&gt; &lt;dest&gt;</pre>	Copy folder (recursive)	<pre>cp -r project backup/</pre>
<pre>mv &lt;src&gt; &lt;dest&gt;</pre>	Move or rename file	<pre>mv old.txt new.txt</pre>
<pre>mv file.txt ~/Desktop</pre>	Move file to another folder	<pre>mv notes.txt ~/Desktop/</pre>

## ◆ Options & Arguments

Command	Description	Example
<code>&lt;command&gt; --help</code>	Show help for command	<code>ls --help</code>
<code>&lt;command&gt; -h</code>	Shortcut help (often works)	<code>cp -h</code>
<code>ls -lh</code>	Combine options (long + human readable)	<code>ls -lh</code>

## ◆ Paths

Symbol	Meaning
<code>.</code>	Current directory
<code>..</code>	Parent directory
<code>~</code>	Home directory
<code>/</code>	Root directory

## ◆ File Permissions

Shown with `ls -l` → Example: `-rwxrw-r--`

- First char: `-` (file), `d` (directory)
- Permissions: grouped as **User / Group / Others**
  - `r` = read (4)
  - `w` = write (2)
  - `x` = execute (run program/script) (1)

- Example:  
-rw-r--r-- → owner can read/write, others can only read  
So Command is : `chmod 644`
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## ◆ Redirection & Piping

Symbol	Description	Example
>	Redirect output (overwrite)	<code>echo "Hi" &gt; hello.txt</code>
>>	Redirect output (append)	<code>echo "More" &gt;&gt; hello.txt</code>

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## ◆ **cat** Command – All Use Cases

The **cat** (**concatenate**) command is used to **view, create, and combine files** in the terminal.

### Basic Usage

Command	Description	Example
<code>cat &lt;file&gt;</code>	Display the content of a file	<code>cat notes.txt</code>
<code>cat &lt;file1&gt; &lt;file2&gt;</code>	Display contents of multiple files in sequence	<code>cat intro.txt chapter1.txt</code>

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## Creating Files

Command	Description	Example
<code>cat &gt; file.txt</code>	Create new file (overwrite if exists) → waits for input. Press <b>Ctrl+D</b> to save & exit.	<code>cat &gt; todo.txt</code>
<code>cat &gt;&gt; file.txt</code>	Append new text to file → waits for input. <b>Ctrl+D</b> to save.	<code>cat &gt;&gt; todo.txt</code>

## Copying & Combining Files

Command	Description	Example
<code>cat file1.txt file2.txt &gt; merged.txt</code>	Combine multiple files into a new file	<code>cat a.txt b.txt &gt; all.txt</code>
<code>cat file.txt &gt; copy.txt</code>	Copy contents into another file	<code>cat report.txt &gt; backup.txt</code>

### ◆ Essential Developer Tools

Tool	Description	Example
<code>git</code>	Version control	<code>git status</code>
<code>curl &lt;url&gt;</code>	Fetch data from web	<code>curl https://api.github.com</code>
<code>grep &lt;pattern&gt; &lt;file&gt;</code>	Search text inside file	<code>grep "error" log.txt</code>
<code>jq</code>	Format/parse JSON	<code>curl https://api.quotable.io/random   jq '.'</code>

## ◆ Package Manager (Homebrew – macOS/Linux)

Command	Description	Example
<code>brew install &lt;pkg&gt;</code>	Install a package	<code>brew install git</code>
<code>brew update</code>	Update brew itself	<code>brew update</code>
<code>brew upgrade</code>	Upgrade installed packages	<code>brew upgrade</code>

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## ✓ Quick Recap (Must-Know for Beginners)

- **Navigation** → `pwd`, `ls`, `cd`
- **File Management** → `touch`, `mkdir`, `rm`
- **Viewing Files** → `cat`, `less`, `echo`
- **File Ops** → `cp`, `mv`
- **Help & Options** → `command --help`
- **Paths** → Absolute vs Relative (`.`, `..`, `~`)
- **Redirection/Piping** → `>`, `>>`, `|`
- **Permissions** → `ls -l` (rwx basics)
- **Tools** → `git`, `curl`, `grep`, `jq`
- **Package Manager** → `brew install <tool>`

