

## Lecture 5 CLI-2 Note

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### 1. Standard Input and Output – Standard Output (stdout):

The default output stream, usually directed to the terminal window.

ex) `echo "Hello, World!" > output.txt` redirects output to a file. – Standard Input

`stdin`: The default input stream, often from the keyboard.

### 2. Pipelines | – Used to connect the output of one command to the input of another.

ex) `ls -l | grep "txt"` lists files, then filters for "txt" files

### 3. Expansion – Wildcards: Expands to match filenames.

ex) `ls *.txt` lists all .txt files. – Brace expansion:

Allows you to create multiple text strings or sequences.

ex) `echo file{1..3}.txt` expands to `file1.txt file2.txt file3.txt`

### 4. Backslash "\ – Escape character: Prevents interpretation of special characters.

ex) `echo "Hello\ World"` outputs: Hello World.

### 5. Permissions – File Permissions: Control who can read, write, and execute a file. Displayed as a combination of r(read), w(write), and x(execute).

ex) `ls -l` lists file permissions. Typical output: `file .-rwxr-xr- 1 user group size date.`

### 6. Changing Permissions – chmod: Changes file permissions using symbolic or numeric modes.

ex) `chmod 755 file` grants read, write, and execute to owner; read and execute to others.

### 7. Superuser – The root user with unlimited access. sudo: Runs commands as the superuser.

ex) `sudo apt update` updates package lists with superuser privileges.

### 8. Text Editors – nano: Simple command-line text editor.

–ex) `nano filename.txt`. – vim: More advanced text editor with modes for inserting and editing text.

–ex) `vim filename.txt`

**9. Shell Script – A text file containing a sequence of commands.**

ex) `#!/bin/bash` followed by `echo "This is a shell script"` in a file, save as `script.sh` and run with `bash script.sh`

**10. History—history: Shows a list of previously excuted commands.**

ex) `history`. `–!n`: Executes command number `n` from the history,

ex) `!43` runs the 42<sup>nd</sup> command from the history list.

**11. wget – Downloads files from the web.**

ex) `wget http://example.com/file.zip`

**12. curl – Transfers data to or from a server using various protocols.**

ex) `curl http://example.com`

**13. grep – Searches for a specific pattern within files.**

ex) `grep "pattern" filename.txt`