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Bash Cheat Sheet (Basic + Advanced)


Basic Navigation
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Print working directory:
    pwd


List files (long format):
    ls -l


Change directory:
    cd /path/to/directory


Go up one directory:
    cd ..


Home directory:
    cd ~


File Management
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Copy a file:
    cp source.txt destination.txt


Copy a directory recursively:
    cp -r sourcedir targetdir


Move or rename a file:
    mv oldname.txt newname.txt


Remove a file:
    rm file.txt


Remove a directory recursively:
    rm -r directory/


Create a directory:
    mkdir newfolder


Create an empty file:
    touch newfile.txt


Viewing and Searching Files
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Show file contents:
    cat file.txt


Page through a file:
    less file.txt


Head (first 10 lines):
    head file.txt
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Tail (last 10 lines):
    tail file.txt

Search in a file:
    grep "search_term" file.txt

Recursive search:
    grep -r "search_term" /path/to/dir/


Permissions
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Change file permissions:
    chmod 755 script.sh

Change file owner:
    sudo chown user:group file.txt


Useful Shortcuts
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Command history:
    history

Run last command again:
    !!

Autocomplete command or filename: [TAB]

Cancel current command: Ctrl+C

Exit shell:
    exit


Variables & Scripts
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Set a variable:
    MYVAR="value"

Print variable:
    echo "$MYVAR"

Run a script:
    bash script.sh

Make a script executable:
    chmod +x script.sh


Networking
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Show IP address:
    ip a
or
    ifconfig

Ping a host:
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    ping 8.8.8.8

Download a file (wget):
    wget http://example.com/file.zip

Process Management
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Show running processes:
    ps aux

Find a process:
    ps aux | grep processname

Kill a process by PID:
    kill 1234

Kill all processes by name:
    killall processname

Disk Usage
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Show disk usage for all files/folders:
    du -sh *

Show free disk space:
    df -h

Other Useful Commands
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Show environment variables:
    printenv

Find files by name:
    find . -name "filename.txt"

Show current date/time:
    date

Advanced Bash
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Command Chaining:
    command1 && command2   # Only runs command2 if command1 succeeds
    command1 || command2   # Runs command2 if command1 fails
    command1 ; command2    # Runs both commands regardless

Redirection & Pipes:
    echo "Hello" > file.txt   # Overwrites
    echo "World" >> file.txt  # Appends
    command 2> error.log
    command > out.log 2>&1
    cat file.txt | grep "pattern"

Loops:
    for i in {1..5}; do
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        echo "Number $i"
    done


    while read line; do
      echo "$line"
    done < file.txt

Conditionals:
    if [ -f file.txt ]; then
      echo "file exists"
    else
      echo "file not found"
    fi

Functions:
    greet() {
      echo "Hello, $1!"
    }
    greet "Ewan"

Find & Xargs:
    find . -name "*.log" -type f -delete
    find . -name "*.txt" | xargs cat

Sed & Awk:
    sed -i 's/oldtext/newtext/g' file.txt
    awk '{print $2}' file.txt

Tar/Gzip:
    tar -czvf archive.tar.gz foldername/
    tar -xzvf archive.tar.gz

SSH & Rsync:
    ssh user@host
    scp file.txt user@host:/path/
    rsync -avz source/ user@host:/dest/

Script Template:
    #!/bin/bash
    echo "This is a shell script"

Miscellaneous
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Print the last command's exit code:
    echo $?
Get the number of files in a directory:
    ls | wc -l
Generate a random number:
    echo $RANDOM
Sleep for 5 seconds:
    sleep 5


Tip: Use 'man <command>' to view the manual for any command!
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