Ultimate TMUX & Terminal Productivity Cheatsheet

🚀 Session Management

Command	Action	Best Practice
`t <name>`	Create/Attach Session	Primary entry point - `t my-project`
`Ctrl+a j`	Pop-up Session Switcher	**Most used** - fuzzy search all projects
`Ctrl+a d`	Detach Session	End of day - keeps everything running
`tmux attach`	Re-attach Session	Next day - restore entire workspace
`Ctrl+a r`	Reload Config	After editing `~/.tmux.conf`

🪟 Windows (Virtual Tabs)

Shortcut	Action	Usage
`Ctrl+a c`	New Window	Separate major tasks
`Ctrl+a ,`	Rename Window	Do immediately - name it meaningfully
`Ctrl+a n/p`	Next/Previous Window	Primary navigation
`Ctrl+a &`	Close Window	Clean up finished tasks
`Ctrl+a 1-9`	Jump to Window	Direct access

📱 Panes (Split Screens)

Shortcut	Action	Best Use
`Ctrl+a %`	Vertical Split	Code + terminal side-by-side
`Ctrl+a "`	Horizontal Split	Editor above, logs below
`Ctrl+a h/j/k/l`	Navigate Panes	Vim-like movement
`Ctrl+a H/J/K/L`	Resize Panes	Hold Ctrl+a, tap multiple times
`Ctrl+a z`	Zoom Pane	Focus mode - toggle fullscreen
`Ctrl+a x`	Close Pane	Clean up splits

📋 Copy & Paste

Shortcut	Action	Note
`Ctrl+a [`	Enter Copy Mode	Scroll through history
`v` (in copy)	Begin Selection	Like Vim visual mode
`y` (in copy)	Copy & Exit	Auto-copies to system clipboard
`Ctrl+a p`	Paste	Paste tmux clipboard

🔧 Plugin Management

Shortcut	Action	When to Use
`Ctrl+a I`	Install Plugins	After adding plugin to config
`Ctrl+a Ctrl+s`	Save Session	Manual session backup
`Ctrl+a Ctrl+r`	Restore Session	Manual session restore

🐚 ZSH Custom Aliases & Functions

📁 File Navigation (Modern Replacements)

Command	Replaces	What You Get
`ls`	`ls`	Icons + Git status with `eza`
`ll`	`ls -la`	Detailed view with colors
`tree`	`tree`	Beautiful directory structure
`cd`	`cd`	Smart navigation with `zoxide`
`cat`	`cat`	Syntax highlighting with `bat`
`grep`	`grep`	Faster search with `ripgrep`

⚡ Productivity Functions

Function	What It Does	Daily Example
`gia`	Git Interactive Add	Changed 10 files, commit only 3

`gco`	Git Checkout Interactive	Fuzzy search branches
`glo`	Git Log Interactive	Beautiful searchable commit history
`mkcd <dir>`	Make & CD	`mkcd new-project` - one command
`fer`	Find & Edit Recent	Files modified in last 24h
`del`	Interactive Delete	Safe multi-select file deletion
`feh`	Find & Edit Header	`feh libft` - instant header access
`todo`	Find TODO/FIXME	Project-wide task list
`port <num>`	Check Port Usage	`port 3000` - see what's using it
`weather`	Weather Forecast	Terminal weather for your location

🔨 Development Shortcuts

Alias	Full Command	Use Case
`gs`	`git status`	Quick repo status
`gd`	`git diff`	See file changes
`..`	`cd ../`	Up one directory
`...`	`cd ../../`	Up two directories
`c`	`clear`	Clear terminal
`h`	`history`	Command history
`fkill`	Interactive kill	Fuzzy search processes to kill

🔍 FZF (Fuzzy Finder) Power Commands

Shortcut	Action	Daily Use
`Ctrl+R`	Command History	**Stop using up-arrow** - fuzzy search history
`Ctrl+T`	File Path Insert	Type `vim` then `Ctrl+T` - instant file picker
`Alt+C`	Fuzzy CD	Jump to any directory quickly

💻 Modern CLI Tools

📊 System Monitoring

Command	Replaces	Upgrade
`btop`	`htop/top`	Beautiful system dashboard
`procs`	`ps`	Clean process list with colors
`dust`	`du`	Visual disk usage
`duf`	`df`	Pretty disk free info

📄 File Operations

Command	Purpose	Example
`fd .c`	Find files	All C files recursively
`bat file.sh`	Pretty file view	Syntax highlighted cat
`rg "function"`	Fast search	Project-wide text search
`ranger` or `r`	File manager	Vim-keys file browser
`mc`	Dual-pane manager	Traditional file operations

🛠️ Developer Tools

Command	Purpose	42 School Use
`glow README.md`	Pretty markdown	Beautiful README viewing
`jq`	JSON processor	API response formatting
`tldr tar`	Quick examples	Skip man pages - see examples
`ipcalc 10.11.25.100/23`	Network calc	netpractice project helper
`unp file.rar`	Universal extract	Any archive format
`termdown 25m`	Pomodoro timer	Focus sessions

🎨 VIM IDE Configuration

🎯 Leader Key System

Leader = Spacebar - All custom shortcuts start with Space

Shortcut	Action	Usage
`Space w`	Quick Save	Instant `:w`
`Space d`	Show Error Details	ALE error popup
`Space cc`	Comment Line/Block	Toggle comments
`Space cu`	Uncomment	Remove comments
`Space j`	Format JSON	Pretty print JSON
`Space l/h`	Next/Prev Buffer	Cycle open files

📂 File Navigation

Key	Plugin	Action
`Ctrl+n`	NERDTree	Toggle file explorer
`Ctrl+p`	CtrlP	Fuzzy file finder
`Ctrl+j/k`	Custom	Move between splits

🔄 Advanced Vim Features

Search & Replace Power

Command	Action	Pro Tip
`*`	Search word under cursor	Then use `n/N` to navigate
`ciw`	Change inner word	Replace word under cursor
`.`	Repeat last change	**Most powerful command**
`%s/old/new/gc`	Global replace with confirm	Safe mass replace

Registers (Multiple Clipboards)

Command	Action	Note
`:reg`	Show all registers	See what you've copied
`"2p`	Paste from register 2	Access any clipboard
`"+y`	Copy to system clipboard	Share with other apps
`"+p`	Paste from system clipboard	Get text from outside Vim

Macros (Automation)

Command	Action	Workflow
`qa`	Record macro to 'a'	Start recording keystrokes
`q`	Stop recording	End macro recording
`@a`	Play macro 'a'	Execute recorded actions
`10@a`	Play macro 10 times	Batch automation

🎪 Integrated Workflow Examples

🌅 Morning Startup Routine

```
# Start your day
t main-project        # Attach to main project session
# Inside tmux:
Ctrl+a j            # Switch between projects
Ctrl+a c             # New window for different task
```

🔥 Development Flow

```
# Navigate and edit
cd proj              # zoxide smart cd
fd .c               # find C files
vim main.c           # open in vim
Ctrl+p              # fuzzy find other files
Space w              # quick save

# Debug and test
todo                # see all TODOs
port 8080           # check what's using port
fkill               # kill hanging processes
```

🔍 Search & Research

```
# Find things fast
Ctrl+R              # fuzzy command history
rg "function_name"    # search in all files
tldr tar            # quick examples
glow README.md       # pretty documentation
```

🎯 Focus Session

```
termdown 25m         # start pomodoro
Ctrl+a z            # zoom pane for focus
# Work intensely
Ctrl+a z            # unzoom when break time
```

🆘 Emergency Commands

Situation	Command	Note
Stuck in Vim	`:q!`	Force quit without saving
Process won't die	`fkill` then search	Interactive process killer
Port conflict	`port <number>`	See what's using the port
Lost in directories	`cd -`	Toggle last two locations
Need system info	`btop`	Full system dashboard
Config broken	`Ctrl+a r`	Reload tmux config

🏆 Pro Tips for 42 School

Project Organization

```
# Start new project
mkcd push_swap
git init
t push_swap          # dedicated tmux session

# Window layout:
# Window 1: Editor (vim)
# Window 2: Testing (tests, debugging)
# Window 3: Monitoring (norminette, valgrind)
```

Code Quality Workflow

```
# Before submitting
todo                 # check all TODOs
norminette           # check norm
valgrind ./program   # memory check
git status           # review changes
gia                  # interactive add only what you want
```

Collaboration

```
# Share session (peer learning)
tmux -S /tmp/shared new-session -d -s shared
chmod 777 /tmp/shared
# Others join with:
tmux -S /tmp/shared attach -t shared
```

💡 ***Memory Palace Technique****: Practice one section per day. Start with tmux basics, then add zsh aliases, then vim. Muscle memory builds through repetition, not cramming.*