12-Week Daily Linux Learning Roadmap

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Contents

Introduction

This roadmap is a beginner-friendly, 12-week daily Linux learning plan. Each day is designed for approximately 4 hours of focused study and hands-on practice. Notes and scripts should be saved and committed to GitHub throughout the journey.

Week 1 – Linux Basics & Terminal Navigation

Day 1

- What is Linux?
- Linux vs Windows/macOS
- Install Ubuntu updates
- Open terminal and explore prompt

Day 2

- Terminal basics
- `pwd`, `ls`, `cd`
- Absolute vs relative paths

Day 3

- `ls -l`, `ls -a`
- Hidden files
- Directory structure overview

Day 4

- Linux filesystem hierarchy
- `/`, `/home`, `/etc`, `/var`, `/tmp`

Day 5

- `tree`
- Navigating deeply nested folders

Day 6

- Manual pages
- `man`, `--help`

Day 7

- Review Week 1
- Write notes in GitHub
- Practice navigation without notes

Week 2 – Files, Permissions, and Ownership

Day 8

- Creating files & folders
- `touch`, `mkdir`

Day 9

- Copying & moving files
- `cp`, `mv`

Day 10

- Deleting files safely
- `rm`, `rmdir`

Day 11

- File permissions explained
- Read / Write / Execute

Day 12

- `chmod`
- Numeric vs symbolic modes

Day 13

- Ownership
- `chown`, `chgrp`

Day 14

- Review permissions
- Break and fix permissions

Week 3 – Package Management & Processes

Day 15

- What is APT?
- `sudo apt update`

Day 16

- Installing packages
- `sudo apt install`

Day 17

- Removing packages
- `sudo apt remove`, `autoremove`

Day 18

- Running processes
- `ps`, `top`

Day 19

- Process control
- `kill`, `pkill`

Day 20

- `htop`
- Monitoring resources

Day 21

- Review & document packages installed

Week 4 – Editors & Shell Environment

Day 22

- Text editors overview
- Nano basics

Day 23

- Nano practice
- Editing config files

Day 24

- Vim introduction
- Modes and navigation

Day 25

- Shell variables
- `echo`, environment variables

Day 26

- `.bashrc`
- Aliases

Day 27

- PATH variable
- Command resolution

Day 28

- Review and shell customization

Week 5 – Searching, Pipes, and Redirection

Day 29

- Searching files
- `find`

Day 30

- Searching text
- `grep`

Day 31

- File indexing
- `locate`, `updatedb`

Day 32

- Output redirection
- `>`, `>>`

Day 33

- Input redirection
- `<`

Day 34

- Pipes
- `|`

Day 35

- Combine commands into pipelines

Week 6 – Networking Fundamentals

Day 36

- Network interfaces
- `ip a`

Day 37

- Routing
- `ip r`

Day 38

- Connectivity testing
- `ping`, `traceroute`

Day 39

- Downloading data
- `curl`, `wget`

Day 40

- DNS basics
- `/etc/hosts`

Day 41

- SSH basics
- `ssh`, `ssh-keygen`

Day 42

- Review networking commands

Week 7 – Bash Scripting Basics

Day 43

- What is a shell script?
- `#!/bin/bash`

Day 44

- Variables

Day 45

- User input

Day 46

- Conditional statements
- `if`, `else`

Day 47

- Loops
- `for`, `while`

Day 48

- Simple automation script

Day 49

- Script review and cleanup

Week 8 – Bash Scripting Advanced

Day 50

- Functions

Day 51

- Exit codes

Day 52

- Error handling

Day 53

- Script arguments
- `$1`, `$@`

Day 54

- Logging output

Day 55

- Debugging scripts
- `bash -x`

Day 56

- Improve earlier scripts

Week 9 – System Administration Basics

Day 57

- Linux boot process

Day 58

- Services
- `systemctl`

Day 59

- Service logs
- `journalctl`

Day 60

- Scheduled tasks
- `cron`

Day 61

- User management
- `useradd`, `usermod`

Day 62

- Sudo & groups

Day 63

- Review system administration

Week 10 – Storage & Filesystems

Day 64

- Disk layout
- `lsblk`

Day 65

- Disk usage
- `df`, `du`

Day 66

- Mounting devices
- `mount`, `umount`

Day 67

- Filesystem types

Day 68

- `/etc/fstab`

Day 69

- Removable storage practice

Day 70

- Storage review

Week 11 – Security Basics

Day 71

- Linux security concepts

Day 72

- Firewall basics
- `ufw`

Day 73

- Open ports
- `ss`, `netstat`

Day 74

- SSH hardening

Day 75

- Permissions audit

Day 76

- Updates & patching

Day 77

- Security review

Week 12 – Capstone Project & Review

Day 78

- Choose final project

Day 79

- Project planning

Day 80

- Script development

Day 81

- Add error handling

Day 82

- Documentation

Day 83

- GitHub cleanup

Day 84

- Final review & PDF export

Conclusion

By completing this roadmap, you will have a solid Linux foundation, real hands-on experience, and a documented GitHub learning project.