

LFD201 - Introduction to Open Source Development, Git, and Linux

Modality: On Demand

Duration: 60 Hours

About this course:

Open source software has a fundamental role in changing the way in which modern world's technology infrastructure works, from the smallest microprocessor to the largest supercomputer. Open source software is beneficial because its use improves the development and makes it fast. Large scale integration has put more eyeballs on the code and has changed the way in which people and corporations make decisions, and the way in which things get done in this day.

The first part of this course will touch upon the foundational yet crucial aspect of this training, which is the working of the open source software. This would include discussing the benefits of using it, as well as ways of working in OSS communities, governance models and licensing choices.

The next and second part of this course consists of teaching on Linux systems. This section will cover a wide array of concepts like installation, desktop environments, text editors, important commands and utilities, command shells and scripts, file systems and compiling software. Students will be given a thorough understanding of these topics in this section.

The third section of this course covers the introduction of Git, the source control system that came out of Linux kernel community, that provides the feature of effective and efficient working of the widely distributed development.

Git is the biggest system used on the planet for collaborative development, with literally every single project using it.

The course hours range between approximately 50 to 60 hours. It contains 40 hands-on exercises for a practical demonstration experience. You will also get knowledge check quizzes along with 20 instructing videos.

On average, a Linux System Administrator earns \$70,057 per annum.

Learning objectives:

The course has the following learning objectives:

- Gaining a strong base for working in open source development communities
- Learning efficient and productive working in Linux
- Learning key Linux methods and features
- Learning Git for creating new repositories or cloning the existing ones
- Learning Git for making changes, survey revision histories, and mark differences between older versions
- Learning Git for working with different branches, merge repositories, and work with a

distributed development team.

Audience:

The course is suitable for software developers and Linux system administrators.

Requirements:

You should be having experience as a developer of any OS. Additionally, it will be good to have experience in working with the command line, but this is not mandatory. Lastly, you should be having a Linux system, either a physical or virtual form of machine.

Course Outline:

- Chapter 1. Course Introduction
- Chapter 2. Open Source Software (OSS)
- Chapter 3. Why Use Open Source Software?
- Chapter 4. How to Work in OSS Projects
- Chapter 5. Continuous Integration
- Chapter 6. OSS Licensing and Legal Issues
- Chapter 7. Linux and the Operating System
- Chapter 8. Graphical Environments and Interfaces
- Chapter 9. Getting Help
- Chapter 10. Text Editors
- Chapter 11. Shells, bash, and the Command Line
- Chapter 12. Filesystem Layout, Partitions, Paths and Links
- Chapter 13 – System Components
- Chapter 14. System Administration
- Chapter 15. Essential Command Line Tools
- Chapter 16. Command and Tool Details
- Chapter 17. Users and Groups
- Chapter 18. Bash Scripting
- Chapter 19. Files and Filesystems
- Chapter 20. Linux Filesystems
- Chapter 21. Compiling, Linking, and Libraries
- Chapter 22. Java Installation and Environment
- Chapter 23. Building RPM and Debian Packages
- Chapter 24. Introduction to Git
- Chapter 25. Git Installation
- Chapter 26. Git and Revision Control Systems
- Chapter 27. Using Git: An Example
- Chapter 28. Git Concepts and Architecture
- Chapter 29. Managing Files and the Index
- Chapter 30. Commits
- Chapter 31. Branches
- Chapter 32. Diffs
- Chapter 33. Merges

- **Chapter 34. Managing Local and Remote Repositories**
- **Chapter 35. Using Patches**