

## Bash Programming Course Master The Linux Command Line

Save when you buy this two book bundle - Linux for Beginners AND Command Line Kung FuLinux for Beginners information:If you want to learn how to use Linux, but don't know where to start read on. Knowing where to start when learning a new skill can be a challenge, especially when the topic seems so vast. There can be so much information available that you can't even decide where to start. Or worse, you start down the path of learning and quickly discover too many concepts, commands, and nuances that aren't explained. This kind of experience is frustrating and leaves you with more questions than answers. Linux for Beginners doesn't make any assumptions about your background or knowledge of Linux. You need no prior knowledge to benefit from this book. You will be guided step by step using a logical and systematic approach. As new concepts, commands, or jargon are encountered they are explained in plain language, making it easy for anyone to understand. Here is what you will learn by reading Linux for Beginners: How to get access to a Linux server if you don't already. What a Linux distribution is and which one to choose. What software is needed to connect to Linux from Mac and Windows computers. Screenshots included. What SSH is and how to use it, including creating and using SSH keys. The file system layout of Linux systems and where to find programs, configurations, and documentation. The basic Linux commands you'll use most often. Creating, renaming, moving, and deleting directories. Listing, reading, creating, editing, copying, and deleting files. Exactly how permissions work and how to decipher the most cryptic Linux permissions with ease. How to use the nano, vi, and emacs editors. Two methods to search for files and directories. How to compare the contents of files. What pipes are, why they are useful, and how to use them. How and why to redirect input and output from applications. How to customize your shell prompt. How to be efficient at the command line by using aliases, tab completion, and your shell history. How to schedule and automate jobs using cron. How to switch users and run processes as others. Where to go for even more in-depth coverage on each topic. Command Line Kung Fu information:Become a Linux Ninja with Command Line Kung Fu!Do you think you have to lock yourself in a basement reading cryptic man pages for months on end in order to have ninja like command line skills?In reality, if you had someone share their most powerful command line tips, tricks, and patterns you'd save yourself a lot of time and frustration. What if you could look over the shoulder of a good friend that just happened to be a command line guru? What if they not only showed you the commands they were using, but why they were using them and exactly how they worked? And what if that friend took the time to write all of it down so you can refer to it whenever you liked?Well, a friend did just that. Command Line Kung Fu is packed with dozens of tips and over 100 practical real-world examples. You won't find theoretical examples in this book. The examples demonstrate how to solve actual problems and

accomplish worthwhile goals. The tactics are easy to find, too. Each chapter covers a specific topic and groups related tips and examples together. For example, if you need help extracting text from a file look in the "Text Processing and Manipulation" chapter. Also, a comprehensive index is included. If you want to find every example where a given command is used -- even if it's not the main subject of the tip -- look in the index. It will list every single place in the book where that command appears.

If you want to learn how to use Linux and level up your career but are pressed for time, read on. As the founder of the Linux Training Academy and an instructor of several courses, I've had the good fortune of helping thousands of people hone their Linux skills. Interacting with so many people who are just getting started with the Linux operating system has given me invaluable insight into the particular struggles and challenges people face at this stage. One of the biggest challenges for people interested in learning the ins and outs of Linux is simply a lack of time. When you are working with a limited and extremely valuable resource you want to make sure you make the most of it. The next biggest challenge for Linux newcomers is knowing where to start. There is so much information available that deciding what to focus your attention on first is a big enough hurdle to keep many people from even starting. What's worse is starting down the path of learning only to discover too many concepts, commands, and nuances that aren't explained. This kind of experience is frustrating and leaves you with more questions than answers. That's why I've written this book. Not only have I condensed the most important material into five sections, each designed to be consumed in a day, I've also structured the content in a logical and systematic manner. This way you'll be sure to make the most out of your time by learning the foundational aspects of Linux first and then building upon that foundation each day. In *Learn Linux in 5 Days* you will learn the most important concepts and commands, and be guided step-by-step through several practical and real-world examples. As new concepts, commands, or jargon are encountered they are explained in plain language, making it easy to understand. Here is what you will learn by reading *Learn Linux in 5 Days*: How to get access to a Linux server if you don't already. What a Linux distribution is and which one to choose. What software is needed to connect to Linux from Mac and Windows computers. Screenshots included. What SSH is and how to use it, including creating and using SSH keys. The file system layout of Linux systems and where to find programs, configurations, and documentation. The basic Linux commands you'll use most often. Creating, renaming, moving, and deleting directories. Listing, reading, creating, editing, copying, and deleting files. Exactly how permissions work and how to decipher the most cryptic Linux permissions with ease. How to use the nano, vi, and emacs editors. Two methods to search for files and directories. How to compare the contents of files. What pipes are, why they are useful, and how to use them. How to compress files to save space and make transferring data easy. How and why to redirect input and output from applications. How to customize your shell

prompt. How to be efficient at the command line by using aliases, tab completion, and your shell history. How to schedule and automate jobs using cron. How to switch users and run processes as others. Where to go for even more in-depth coverage on each topic. What you learn in Learn Linux in 5 Days applies to any Linux environment including Ubuntu, Debian, Linux Mint, RedHat, Fedora, OpenSUSE, Slackware, and more. Scroll up, click the Buy Now With 1 Click button and get started learning Linux today!

Master the techniques needed to build great, efficient embedded devices on Linux About This Book Discover how to build and configure reliable embedded Linux devices This book has been updated to include Linux 4.9 and Yocto Project 2.2 (Morty) This comprehensive guide covers the remote update of devices in the field and power management Who This Book Is For If you are an engineer who wishes to understand and use Linux in embedded devices, this book is for you. It is also for Linux developers and system programmers who are familiar with embedded systems and want to learn and program the best in class devices. It is appropriate for students studying embedded techniques, for developers implementing embedded Linux devices, and engineers supporting existing Linux devices. What You Will Learn Evaluate the Board Support Packages offered by most manufacturers of a system on chip or embedded module Use Buildroot and the Yocto Project to create embedded Linux systems quickly and efficiently Update IoT devices in the field without compromising security Reduce the power budget of devices to make batteries last longer Interact with the hardware without having to write kernel device drivers Debug devices remotely using GDB, and see how to measure the performance of the systems using powerful tools such as `perf`, `ftrace`, and `valgrind` Find out how to configure Linux as a real-time operating system In Detail Embedded Linux runs many of the devices we use every day, from smart TVs to WiFi routers, test equipment to industrial controllers - all of them have Linux at their heart. Linux is a core technology in the implementation of the inter-connected world of the Internet of Things. The comprehensive guide shows you the technologies and techniques required to build Linux into embedded systems. You will begin by learning about the fundamental elements that underpin all embedded Linux projects: the toolchain, the bootloader, the kernel, and the root filesystem. You'll see how to create each of these elements from scratch, and how to automate the process using Buildroot and the Yocto Project. Moving on, you'll find out how to implement an effective storage strategy for flash memory chips, and how to install updates to the device remotely once it is deployed. You'll also get to know the key aspects of writing code for embedded Linux, such as how to access hardware from applications, the implications of writing multi-threaded code, and techniques to manage memory in an efficient way. The final chapters show you how to debug your code, both in applications and in the Linux kernel, and how to profile the system so that you can look out for performance bottlenecks. By the end of the book, you will have a complete overview of the steps required to create a

successful embedded Linux system. Style and approach This book is an easy-to-follow and pragmatic guide with in-depth analysis of the implementation of embedded devices. It follows the life cycle of a project from inception through to completion, at each stage giving both the theory that underlies the topic and practical step-by-step walkthroughs of an example implementation.

This is the eBook of the printed book and may not include any media, website access codes, or print supplements that may come packaged with the bound book. Used by sites as varied as Twitter, GitHub, Disney, and Airbnb, Ruby on Rails is one of the most popular frameworks for developing web applications, but it can be challenging to learn and use.

Whether you're new to web development or new only to Rails, Ruby on Rails™ Tutorial, Fourth Edition, is the solution. Best-selling author and leading Rails developer Michael Hartl teaches Rails by guiding you through the development of three example applications of increasing sophistication. The tutorial's examples focus on the general principles of web development needed for virtually any kind of website. The updates to this edition include full compatibility with Rails 5, a division of the largest chapters into more manageable units, and a huge number of new exercises interspersed in each chapter for maximum reinforcement of the material. This indispensable guide provides integrated tutorials not only for Rails, but also for the essential Ruby, HTML, CSS, and SQL skills you need when developing web applications. Hartl explains how each new technique solves a real-world problem, and then he demonstrates it with bite-sized code that's simple enough to understand, yet novel enough to be useful. Whatever your previous web development experience, this book will guide you to true Rails mastery. This book will help you Install and set up your Rails development environment, including pre-installed integrated development environment (IDE) in the cloud Go beyond generated code to truly understand how to build Rails applications from scratch Learn testing and test-driven development (TDD) Effectively use the Model-View-Controller (MVC) pattern Structure applications using the REST architecture Build static pages and transform them into dynamic ones Master the Ruby programming skills all Rails developers need Create high-quality site layouts and data models Implement registration and authentication systems, including validation and secure passwords Update, display, and delete users Upload images in production using a cloud storage service Implement account activation and password reset, including sending email with Rails Add social features and microblogging, including an introduction to Ajax Record version changes with Git and create a secure remote repository at Bitbucket Deploy your applications early and often with Heroku

If you hope to outmaneuver threat actors, speed and efficiency need to be key components of your cybersecurity operations. Mastery of the standard command line interface (CLI) is an invaluable skill in times of crisis because no other software application can match the CLI's availability, flexibility, and agility. This practical guide shows you how to use the

CLI with the bash shell to perform tasks such as data collection and analysis, intrusion detection, reverse engineering, and administration. Authors Paul Troncone, founder of Digadel Corporation, and Carl Albing, coauthor of bash Cookbook (O'Reilly), provide insight into command line tools and techniques to help defensive operators collect data, analyze logs, and monitor networks. Penetration testers will learn how to leverage the enormous amount of functionality built into every version of Linux to enable offensive operations. With this book, security practitioners, administrators, and students will learn how to: Collect and analyze data, including system logs Search for and through files Detect network and host changes Develop a remote access toolkit Format output for reporting Develop scripts to automate tasks

Giving you the confidence you need to take on Docker in the real world, this guide is the ultimate book for learning Docker, brought to you by Docker Captain and leading educator in the container ecosystem. --

More than 50 percent new and revised content for today's Linux environment gets you up and running in no time! Linux continues to be an excellent, low-cost alternative to expensive operating systems. Whether you're new to Linux or need a reliable update and reference, this is an excellent resource. Veteran bestselling author Christopher Negus provides a complete tutorial packed with major updates, revisions, and hands-on exercises so that you can confidently start using Linux today. Offers a complete restructure, complete with exercises, to make the book a better learning tool Places a strong focus on the Linux command line tools and can be used with all distributions and versions of Linux Features in-depth coverage of the tools that a power user and a Linux administrator need to get started This practical learning tool is ideal for anyone eager to set up a new Linux desktop system at home or curious to learn how to manage Linux server systems at work.

Provides readers with end-to-end shell scripts that can be used to automate repetitive tasks and solve real-world system administration problems Targets the specific command structure for four popular UNIX systems: Solaris, Linux, AIX, and HP-UX Illustrates dozens of example tasks, presenting the proper command syntax and analyzing the performance gain or loss using various control structure techniques Web site includes all the shell scripts used in the book

This book presents the outcomes of the 8th International Conference in Methodologies and Intelligent Systems for Technology Enhanced Learning held in Toledo (Spain) hosted by the University of Castilla-La Mancha from 20 th to 22nd June 2018. Further expanding the topics of the previous editions, the conference provided an open forum for discussing intelligent systems for technology enhanced learning (TEL) and their roots in novel learning theories, empirical methodologies for their design or evaluation, stand-alone and web-based solutions and maker spaces, and also fostering entrepreneurship and increasing business startup ideas. It brought together researchers and developers from industry, the education field and the academic world to report on the latest scientific research, technical advances and methodologies.

A compendium of shell scripting recipes that can immediately be used, adjusted, and applied The shell is the primary way of communicating with the Unix and Linux systems, providing a direct way to program by automating simple-to-intermediate tasks. With this book, Linux expert

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Steve Parker shares a collection of shell scripting recipes that can be used as is or easily modified for a variety of environments or situations. The book covers shell programming, with a focus on Linux and the Bash shell; it provides credible, real-world relevance, as well as providing the flexible tools to get started immediately. Shares a collection of helpful shell scripting recipes that can immediately be used for various of real-world challenges Features recipes for system tools, shell features, and systems administration Provides a host of plug and play recipes for to immediately apply and easily modify so the wheel doesn't have to be reinvented with each challenge faced Come out of your shell and dive into this collection of tried and tested shell scripting recipes that you can start using right away!

The Bash Guide for Beginners (Second Edition) discusses concepts useful in the daily life of the serious Bash user. While a basic knowledge of shell usage is required, it starts with a discussion of shell building blocks and common practices. Then it presents the grep, awk and sed tools that will later be used to create more interesting examples. The second half of the course is about shell constructs such as loops, conditional tests, functions and traps, and a number of ways to make interactive scripts. All chapters come with examples and exercises that will help you become familiar with the theory.

Learn how to build your own multimedia workstation, and how to use it! Slackermedia is a multimedia guidebook for people looking to get away from operating systems that tell them what they can or can't do in their art. But it doesn't stop there! In this volume, you'll find detailed guides on the most important multimedia applications on Linux today: the Kdenlive video editor and the Qtractor digital audio workstation. You'll also get tips and resources on other great multimedia applications of Linux, like Blender, Audacity, Jamin, CALF, LADSPA, GIMP, Inkscape, ffmpeg, sox, Qsynth, fluidsynth, soundfonts, Xsynth, whySynth, QJack Control, Font Matrix, and many many more. By the end of your journey with Slackermedia, you'll know everything you need to know to create original multimedia content and any kind of digital art on the powerful, free operating system of GNU Linux. So put your nerd glasses on, roll up your sleeves, and prepare yourself for creativity like you've never experienced.

For system administrators, programmers, and end users, shell command or carefully crafted shell script can save you time and effort, or facilitate consistency and repeatability for a variety of common tasks. This cookbook provides more than 300 practical recipes for using bash, the popular Unix shell that enables you to harness and customize the power of any Unix or Linux system. Ideal for new and experienced users alike—including proficient Windows users and sysadmins—this updated second edition helps you solve a wide range of problems. You'll learn ways to handle input/output, file manipulation, program execution, administrative tasks, and many other challenges. Each recipe includes one or more scripting examples and a discussion of why the solution works. You'll find recipes for problems including: Standard output and input, and executing commands Shell variables, shell logic, and arithmetic Intermediate shell tools and advanced scripting Searching for files with find, locate, and slocate Working with dates and times Creating shell scripts for various end-user tasks Working with tasks that require parsing Writing secure shell scripts Configuring and customizing bash

This practical, tutorial-style book uses the Kali Linux distribution to teach Linux basics with a focus on how hackers would use them. Topics include Linux command line basics, filesystems, networking, BASH basics, package management, logging, and the Linux kernel and drivers. If you're getting started along the exciting path of hacking, cybersecurity, and pentesting, Linux Basics for Hackers is an excellent first step. Using Kali Linux, an advanced penetration testing distribution of Linux, you'll learn the basics of using the Linux operating system and acquire the tools and techniques you'll need to take control of a Linux environment. First, you'll learn how to install Kali on a virtual machine and get an introduction to basic Linux concepts. Next, you'll tackle broader Linux topics like manipulating text, controlling file and directory

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permissions, and managing user environment variables. You'll then focus in on foundational hacking concepts like security and anonymity and learn scripting skills with bash and Python. Practical tutorials and exercises throughout will reinforce and test your skills as you learn how to: - Cover your tracks by changing your network information and manipulating the rsyslog logging utility - Write a tool to scan for network connections, and connect and listen to wireless networks - Keep your internet activity stealthy using Tor, proxy servers, VPNs, and encrypted email - Write a bash script to scan open ports for potential targets - Use and abuse services like MySQL, Apache web server, and OpenSSH - Build your own hacking tools, such as a remote video spy camera and a password cracker Hacking is complex, and there is no single way in. Why not start at the beginning with Linux Basics for Hackers?

Linux for Developers shows you how to start writing great code for Linux, whether you're a Linux user with little or no coding experience, or an experienced Windows programmer. Leading IT trainer/author William "Bo" Rothwell begins with a clear and up-to-date review of modern open source software, including the licensing arrangements and tradeoffs all developers need to understand. He presents essential skills for both Linux command line and GUI environments, introducing text editors and other tools for efficient coding. Building on this knowledge, Rothwell introduces scripting tools such as Bash, Python, and Perl, as well as traditional object-oriented programming languages such as Java, C++, and C. Finally, he presents a full section on the powerful Git version control system, teaching skills you can use in Linux and many other environments. Access Linux systems, use GUIs, and work at the command line Learn how Linux organizes files and navigate its filesystem Use basic developer commands such as gzip and grep Edit programs with vi and vim, and explore alternative editors Perform basic sysadmin tasks that developers often need to handle Compare Linux languages to choose the best one for each task Write Bash scripts that interact with users or other shell features Program with Python and Perl: flow control, variables, and more Understand Linux features related to building C, C++, and Java programs Stay on top of complex projects with GIT revision control Work in GIT: staging, committing, branches, diffs, merges, and patches Manage local and remote GIT repositories This guide's modular coverage helps you quickly access whatever information you need right now.

The complete course to master Bash shell scripting for Linux About This Video Learn how to write well documented, modular, efficient and complex shell scripts, automate daily routines, basic programming concepts such as loops, commands and statements How to effectively write command line processing, process management and even manipulate command-line functions. Shell Scripting course has been specifically designed to teach you how to use BASH to shave hours from your coding practice. In Detail Want to feel like an awesome spy hacker similar to the one in the movies that opens a command line terminal and manages to complete complicated tasks using a few simple codes? Well, this can be a reality using BASH. A huge chunk of a programmer's time is wasted in trying to repeat codes and processes, especially when it comes to working with UNIX or Linux. The constant commands that are required to program or create systems is a tedious and long process. Well, here's how you can eliminate that and save a whole buncha time - BASH Bourne Again Shell, more popularly known as BASH is a UNIX/Linux shell and a command line interpreter that runs commands from a standard input file. This shell comes with a nifty feature that allows you to reduce the amount of commands that you have to call personally by automating them.

Learning the bash Shell Unix Shell Programming "O'Reilly Media, Inc."

The free book "Fundamentals of Computer Programming with C#" is a comprehensive computer programming tutorial that teaches programming, logical thinking, data structures and algorithms, problem solving and high quality code with lots of examples in C#. It starts with the first steps in programming and software development like variables, data types, conditional statements, loops and arrays and continues

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with other basic topics like methods, numeral systems, strings and string processing, exceptions, classes and objects. After the basics this fundamental programming book enters into more advanced programming topics like recursion, data structures (lists, trees, hash-tables and graphs), high-quality code, unit testing and refactoring, object-oriented principles (inheritance, abstraction, encapsulation and polymorphism) and their implementation the C# language. It also covers fundamental topics that each good developer should know like algorithm design, complexity of algorithms and problem solving. The book uses C# language and Visual Studio to illustrate the programming concepts and explains some C# / .NET specific technologies like lambda expressions, extension methods and LINQ. The book is written by a team of developers lead by Svetlin Nakov who has 20+ years practical software development experience. It teaches the major programming concepts and way of thinking needed to become a good software engineer and the C# language in the meantime. It is a great start for anyone who wants to become a skillful software engineer. The books does not teach technologies like databases, mobile and web development, but shows the true way to master the basics of programming regardless of the languages, technologies and tools. It is good for beginners and intermediate developers who want to put a solid base for a successful career in the software engineering industry. The book is accompanied by free video lessons, presentation slides and mind maps, as well as hundreds of exercises and live examples. Download the free C# programming book, videos, presentations and other resources from <http://introprogramming.info>. Title: Fundamentals of Computer Programming with C# (The Bulgarian C# Programming Book) ISBN: 9789544007737 ISBN-13: 978-954-400-773-7 (9789544007737) ISBN-10: 954-400-773-3 (9544007733) Author: Svetlin Nakov & Co. Pages: 1132 Language: English Published: Sofia, 2013 Publisher: Faber Publishing, Bulgaria Web site: <http://www.introprogramming.info> License: CC-Attribution-Share-Alike Tags: free, programming, book, computer programming, programming fundamentals, ebook, book programming, C#, CSharp, C# book, tutorial, C# tutorial; programming concepts, programming fundamentals, compiler, Visual Studio, .NET, .NET Framework, data types, variables, expressions, statements, console, conditional statements, control-flow logic, loops, arrays, numeral systems, methods, strings, text processing, StringBuilder, exceptions, exception handling, stack trace, streams, files, text files, linear data structures, list, linked list, stack, queue, tree, balanced tree, graph, depth-first search, DFS, breadth-first search, BFS, dictionaries, hash tables, associative arrays, sets, algorithms, sorting algorithm, searching algorithms, recursion, combinatorial algorithms, algorithm complexity, OOP, object-oriented programming, classes, objects, constructors, fields, properties, static members, abstraction, interfaces, encapsulation, inheritance, virtual methods, polymorphism, cohesion, coupling, enumerations, generics, namespaces, UML, design patterns, extension methods, anonymous types, lambda expressions, LINQ, code quality, high-quality code, high-quality classes, high-quality methods, code formatting, self-documenting code, code refactoring, problem solving, problem solving methodology, 9789544007737, 9544007733

- Teaches the reader how to use Unix, which is the key to basic computing and allows the most flexibility for bioinformatics applications
- Written specifically with the needs of molecular biologists in mind
- Easy to follow, written for beginners with no computational knowledge
- Includes examples from biological data analysis
- Can be use either for self-teaching or in courses

It is no surprise to anyone that, currently, the technological and computer processes are advancing and progressing at an extremely advanced speed. Every day, we see new applications, programs, electronics, and other products that make a lot easier the actions we do every day. For the creation of each of these things, the union and coexistence of many factors are required. For a vehicle to work properly, it must have a computer in charge of all the processes. Apart from the electricity and electronics of the vehicle, we need the programming. In this book, you will find extremely important information about the beginnings of programming in general and to learn how to program in the



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programming language Python from zero. Throughout the chapters of this book, you will find several examples of programs that will help you understand the programming process. In addition to that, when you finish this book, you will have extensive knowledge in the following areas:

- Data Types Integers, Floats, Complex, Booleans, Strings, and others; The meaning of variable, how to declare a variable, and types of variables
- Basic Operators and Statements: What are the basic operators and why they are needed, the different statements with their respective diagrams
- Loops and Control Statements: What is a loop and how to use it, nested loops, for, range, while, break, continue, and pass
- Exceptions: What is an exception and its benefits, the use of try and except
- Files Management: What is it and how to use it, handling .xlsx, .pdf, and .txt files
- MySQL: What is a database and how to use it, short introduction to MySQL language, Python and MySQL
- Programming and Classes-Objects: What is OOP (Object-Oriented Programming) and the benefits of this type of programming, what is a class and a method and how to create them

"Master the art of scripting with these popular languages in this comprehensive beginner's course! The first thing any DevOps engineer learns is a scripting language to navigate through devices, software and servers. These are exceptionally powerful and are the basics of learning development. We will break down each language to help you master the fundamental concepts that the language is built on. The 3 languages that are covered are Bash, Python and Ruby. Bash is a scripting language commonly used for programming in Linux. Linux scripts are used for automating certain programming tasks. They can also be used to simplify complex tasks and also help solve real-world problems. While learning how to write scripts is easy, it is a little more difficult to write good and effective scripts. In this course, we focus on exactly that. We will show you how to write amazing scripts that can not only reduce repetitive tasks, but also can be integrated into your real-world projects. Python is another popular programming language that is commonly used for back-end development. An amazing feature of Python is that it allows you to do much more using fewer lines of codes. This course focuses on helping you learn exactly how to get the most out of Python. Lastly, we will focus on Ruby. Ruby is a dynamic programming language that focuses on simplicity and productivity. It was designed to support multiple programming paradigms, including functional, object-oriented, and imperative. It is used for building apps and websites on Linux and UNIX. This includes writing basic scripts, important syntax rules, automating tasks using code snippets and even writing codes for building actual products. At the end of this course, you will have not only mastered three powerful programming languages, but you'll also be comfortable enough to actually start writing simple programs using these languages."--Resource description page.

This book gathers a selection of the articles accepted for presentation and discussion at the 2nd International Conference on Smart Learning Ecosystems and Regional Developments (SLERD 2017), held 22–23 June What characterizes smart learning ecosystems? What is their role in city and regional development and innovation? How can we promote the engagement of citizens in smart learning ecosystems? These are some of the questions addressed at SLERD 2017 and documented here. The proceedings include scientific papers that endeavor to understand, devise and promote innovative human-centric design and development methods, education/training practices, informal social learning, and citizen-driven policies. The individual papers elaborate on the notion of smart learning ecosystems, study the relation of smart learning ecosystems with As such, they help to foster the social innovation sectors, Information and Communication Technology (ICT) and economic development and deployment strategies, alongside new policies for smarter, proactive citizens – making them a valuable resource for researchers and policymakers alike.

Advance your understanding of the Linux command line with this invaluable resource Linux Command Line and Shell Scripting Bible, 4th Edition is the newest installment in the indispensable series known to Linux developers all over the world. Packed with concrete strategies

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and practical tips, the latest edition includes brand-new content covering: Understanding the Shell Writing Simple Script Utilities Producing Database, Web & Email Scripts Creating Fun Little Shell Scripts Written by accomplished Linux professionals Christine Bresnahan and Richard Blum, Linux Command Line and Shell Scripting Bible, 4th Edition teaches readers the fundamentals and advanced topics necessary for a comprehensive understanding of shell scripting in Linux. The book is filled with real-world examples and usable scripts, helping readers navigate the challenging Linux environment with ease and convenience. The book is perfect for anyone who uses Linux at home or in the office and will quickly find a place on every Linux enthusiast's bookshelf.

Learn how to write shell script effectively with Bash, to quickly and easily write powerful scripts to manage processes, automate tasks, and to redirect and filter program input and output in useful and novel ways. Key Features Demystify the Bash command line Write shell scripts safely and effectively Speed up and automate your daily work Book Description Bash and shell script programming is central to using Linux, but it has many peculiar properties that are hard to understand and unfamiliar to many programmers, with a lot of misleading and even risky information online. Bash Quick Start Guide tackles these problems head on, and shows you the best practices of shell script programming. This book teaches effective shell script programming with Bash, and is ideal for people who may have used its command line but never really learned it in depth. This book will show you how even simple programming constructs in the shell can speed up and automate any kind of daily command-line work. For people who need to use the command line regularly in their daily work, this book provides practical advice for using the command-line shell beyond merely typing or copy-pasting commands into the shell. Readers will learn techniques suitable for automating processes and controlling processes, on both servers and workstations, whether for single command lines or long and complex scripts. The book even includes information on configuring your own shell environment to suit your workflow, and provides a running start for interpreting Bash scripts written by others. What you will learn Understand where the Bash shell fits in the system administration and programming worlds Use the interactive Bash command line effectively Get to grips with the structure of a Bash command line Master pattern-matching and transforming text with Bash Filter and redirect program input and output Write shell scripts safely and effectively Who this book is for People who use the command line on Unix and Linux servers already, but don't write primarily in Bash. This book is ideal for people who've been using a scripting language such as Python, JavaScript or PHP, and would like to understand and use Bash more effectively. If you want to learn how to use Linux, but don't know where to start read on. Knowing where to start when learning a new skill can be a challenge, especially when the topic seems so vast. There can be so much information available that you can't even decide where to start. Or worse, you start down the path of learning and quickly discover too many concepts, commands, and nuances that aren't explained. This kind of experience is frustrating and leaves you with more questions than answers. Linux for Beginners doesn't make any assumptions about your background or knowledge of Linux. You need no prior knowledge to benefit from this book. You will be guided step by step using a logical and systematic approach. As new concepts, commands, or jargon are encountered they are explained in plain language, making it easy for anyone to understand. Here is what you will learn by reading Linux for Beginners: How to get access to a Linux server if you don't already. What a Linux distribution is and which one to choose. What software is needed to connect to Linux from Mac and Windows computers. Screenshots included. What SSH is and how to use it, including creating and using SSH keys. The file system layout of Linux systems and where to find programs, configurations, and documentation. The basic Linux commands you'll use most often. Creating, renaming, moving, and deleting directories.

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Listing, reading, creating, editing, copying, and deleting files. Exactly how permissions work and how to decipher the most cryptic Linux permissions with ease. How to use the nano, vi, and emacs editors. Two methods to search for files and directories. How to compare the contents of files. What pipes are, why they are useful, and how to use them. How to compress files to save space and make transferring data easy. How and why to redirect input and output from applications. How to customize your shell prompt. How to be efficient at the command line by using aliases, tab completion, and your shell history. How to schedule and automate jobs using cron. How to switch users and run processes as others. Where to go for even more in-depth coverage on each topic. What you learn in "Linux for Beginners" applies to any Linux environment including Ubuntu, Debian, Linux Mint, RedHat, Fedora, OpenSUSE, Slackware, and more. Scroll up, click the Buy Now With 1 Click button and get started learning Linux today!

Praise for the First Edition: "This outstanding book ... gives the reader robust concepts and implementable knowledge of this environment. Graphical user interface (GUI)-based users and developers do not get short shrift, despite the command-line interface's (CLI) full-power treatment. ... Every programmer should read the introduction's Unix/Linux philosophy section. ... This authoritative and exceptionally well-constructed book has my highest recommendation. It will repay careful and recursive study." --Computing Reviews, August 2011

Mastering Modern Linux, Second Edition retains much of the good material from the previous edition, with extensive updates and new topics added. The book provides a comprehensive and up-to-date guide to Linux concepts, usage, and programming. The text helps the reader master Linux with a well-selected set of topics, and encourages hands-on practice. The first part of the textbook covers interactive use of Linux via the Graphical User Interface (GUI) and the Command-Line Interface (CLI), including comprehensive treatment of the Gnome desktop and the Bash Shell. Using different apps, commands and filters, building pipelines, and matching patterns with regular expressions are major focuses. Next comes Bash scripting, file system structure, organization, and usage. The following chapters present networking, the Internet and the Web, data encryption, basic system admin, as well as Web hosting. The Linux Apache MySQL/MariaDB PHP (LAMP) Web hosting combination is also presented in depth. In the last part of the book, attention is turned to C-level programming. Topics covered include the C compiler, preprocessor, debugger, I/O, file manipulation, process control, inter-process communication, and networking. The book includes many examples and complete programs ready to download and run. A summary and exercises of varying degrees of difficulty can be found at the end of each chapter. A companion website (<http://mml.sofpower.com>) provides appendices, information updates, an example code package, and other resources for instructors, as well as students.

O'Reilly's bestselling book on Linux's bash shell is at it again. Now that Linux is an established player both as a server and on the desktop Learning the bash Shell has been updated and refreshed to account for all the latest changes. Indeed, this third edition serves as the most valuable guide yet to the bash shell. As any good programmer knows, the first thing users of the Linux operating system come face to face with is the shell the UNIX term for a user interface to the system. In other words, it's what lets you communicate with the computer via the keyboard and display. Mastering the bash shell might sound fairly simple but it isn't. In truth, there are many complexities that need careful explanation, which is just what Learning the bash Shell provides. If you are

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new to shell programming, the book provides an excellent introduction, covering everything from the most basic to the most advanced features. And if you've been writing shell scripts for years, it offers a great way to find out what the new shell offers. Learning the bash Shell is also full of practical examples of shell commands and programs that will make everyday use of Linux that much easier. With this book, programmers will learn: How to install bash as your login shell The basics of interactive shell use, including UNIX file and directory structures, standard I/O, and background jobs Command line editing, history substitution, and key bindings How to customize your shell environment without programming The nuts and bolts of basic shell programming, flow control structures, command-line options and typed variables Process handling, from job control to processes, coroutines and subshells Debugging techniques, such as trace and verbose modes Techniques for implementing system-wide shell customization and features related to system security

You've experienced the shiny, point-and-click surface of your Linux computer—now dive below and explore its depths with the power of the command line. The Linux Command Line takes you from your very first terminal keystrokes to writing full programs in Bash, the most popular Linux shell. Along the way you'll learn the timeless skills handed down by generations of gray-bearded, mouse-shunning gurus: file navigation, environment configuration, command chaining, pattern matching with regular expressions, and more. In addition to that practical knowledge, author William Shotts reveals the philosophy behind these tools and the rich heritage that your desktop Linux machine has inherited from Unix supercomputers of yore. As you make your way through the book's short, easily-digestible chapters, you'll learn how to:

- \* Create and delete files, directories, and symlinks
- \* Administer your system, including networking, package installation, and process management
- \* Use standard input and output, redirection, and pipelines
- \* Edit files with Vi, the world's most popular text editor
- \* Write shell scripts to automate common or boring tasks
- \* Slice and dice text files with cut, paste, grep, patch, and sed

Once you overcome your initial "shell shock," you'll find that the command line is a natural and expressive way to communicate with your computer. Just don't be surprised if your mouse starts to gather dust. A featured resource in the Linux Foundation's "Evolution of a SysAdmin"

A Bourne Shell Programming/Scripting Tutorial for learning about using the Unix shell. Learn Linux / Unix shell scripting by example along with the theory. We'll have you mastering Unix shell scripting in no time! This thorough yet practical tutorial with examples throughout has been written with extensive feedback from literally hundreds of students and professionals in the field, both with and without a Unix or Linux background. From the author of the Wiley book "Shell Scripting - Expert Recipes for Bash, Linux and more" and of "How to Build a LAMP Server," this is his best-read and most popular work to date.

The Linux Programming Interface (TLPI) is the definitive guide to the Linux and UNIX programming interface—the interface employed by nearly every application that runs on a Linux or UNIX system. In this authoritative work, Linux programming expert Michael Kerrisk provides detailed descriptions of the system calls and library functions that you need in order to master the craft of system programming, and accompanies his explanations with clear, complete example programs. You'll find descriptions of over 500 system calls and library functions, and more than 200 example programs, 88 tables, and 115 diagrams. You'll learn how to:

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–Read and write files efficiently –Use signals, clocks, and timers –Create processes and execute programs –Write secure programs –Write multithreaded programs using POSIX threads –Build and use shared libraries –Perform interprocess communication using pipes, message queues, shared memory, and semaphores –Write network applications with the sockets API While The Linux Programming Interface covers a wealth of Linux-specific features, including epoll, inotify, and the /proc file system, its emphasis on UNIX standards (POSIX.1-2001/SUSv3 and POSIX.1-2008/SUSv4) makes it equally valuable to programmers working on other UNIX platforms. The Linux Programming Interface is the most comprehensive single-volume work on the Linux and UNIX programming interface, and a book that's destined to become a new classic.

This multimedia tutorial and book package teaches Linux shells programming. It guides the reader through all of the Linux equivalents of UNIX shells and key utilities, including bash, tcsh and gawk. 50 real world shell scripts that automate routine system administration are included.

Master the complexities of Bash shell scripting and unlock the power of shell for your enterprise Key Features Identify high-level steps such as verifying user input Using the command line and conditional statements in creating/executing simple shell scripts Create and edit dynamic shell scripts to manage complex and repetitive tasks Leverage the command-line to bypass GUI and automate common tasks Book Description In this book, you'll discover everything you need to know to master shell scripting and make informed choices about the elements you employ. Grab your favorite editor and start writing your best Bash scripts step by step. Get to grips with the fundamentals of creating and running a script in normal mode, and in debug mode. Learn about various conditional statements' code snippets, and realize the power of repetition and loops in your shell script. You will also learn to write complex shell scripts. This book will also deep dive into file system administration, directories, and system administration like networking, process management, user authentications, and package installation and regular expressions. Towards the end of the book, you will learn how to use Python as a BASH Scripting alternative. By the end of this book, you will know shell scripts at the snap of your fingers and will be able to automate and communicate with your system with keyboard expressions. What you will learn Make, execute, and debug your first Bash script Create interactive scripts that prompt for user input Foster menu structures for operators with little command-line experience Develop scripts that dynamically edit web configuration files to produce a new virtual host Write scripts that use AWK to search and reports on log files Draft effective scripts using functions as building blocks, reducing maintenance and build time Make informed choices by comparing different script languages such as Python with BASH Who this book is for If you are a Linux administrator or a system administrator and are interested in automating tasks in your daily lives, saving time and effort, this book is for you. Basic shell scripting and command-line experience will be required. Familiarity with the tasks you need to automate will be helpful.

This book is Part I of the fourth edition of Robert Sedgewick and Kevin Wayne's Algorithms , the leading textbook on algorithms today, widely used in colleges and universities worldwide. Part I contains Chapters 1 through 3 of the book. The fourth edition of Algorithms surveys the most important computer algorithms currently in use and provides a full

treatment of data structures and algorithms for sorting, searching, graph processing, and string processing -- including fifty algorithms every programmer should know. In this edition, new Java implementations are written in an accessible modular programming style, where all of the code is exposed to the reader and ready to use. The algorithms in this book represent a body of knowledge developed over the last 50 years that has become indispensable, not just for professional programmers and computer science students but for any student with interests in science, mathematics, and engineering, not to mention students who use computation in the liberal arts. The companion web site, [algs4.cs.princeton.edu](http://algs4.cs.princeton.edu) contains An online synopsis Full Java implementations Test data Exercises and answers Dynamic visualizations Lecture slides Programming assignments with checklists Links to related material The MOOC related to this book is accessible via the "Online Course" link at [algs4.cs.princeton.edu](http://algs4.cs.princeton.edu). The course offers more than 100 video lecture segments that are integrated with the text, extensive online assessments, and the large-scale discussion forums that have proven so valuable. Offered each fall and spring, this course regularly attracts tens of thousands of registrants. Robert Sedgwick and Kevin Wayne are developing a modern approach to disseminating knowledge that fully embraces technology, enabling people all around the world to discover new ways of learning and teaching. By integrating their textbook, online content, and MOOC, all at the state of the art, they have built a unique resource that greatly expands the breadth and depth of the educational experience.

Learn how to hack systems like black hat hackers and secure them like security experts Key Features Understand how computer systems work and their vulnerabilities Exploit weaknesses and hack into machines to test their security Learn how to secure systems from hackers Book Description This book starts with the basics of ethical hacking, how to practice hacking safely and legally, and how to install and interact with Kali Linux and the Linux terminal. You will explore network hacking, where you will see how to test the security of wired and wireless networks. You'll also learn how to crack the password for any Wi-Fi network (whether it uses WEP, WPA, or WPA2) and spy on the connected devices. Moving on, you will discover how to gain access to remote computer systems using client-side and server-side attacks. You will also get the hang of post-exploitation techniques, including remotely controlling and interacting with the systems that you compromised. Towards the end of the book, you will be able to pick up web application hacking techniques. You'll see how to discover, exploit, and prevent a number of website vulnerabilities, such as XSS and SQL injections. The attacks covered are practical techniques that work against real systems and are purely for educational purposes. At the end of each section, you will learn how to detect, prevent, and secure systems from these attacks. What you will learn Understand ethical hacking and the different fields and types of hackers Set up a penetration testing lab to practice safe and legal hacking Explore Linux basics, commands, and how to interact with the terminal Access password-protected

networks and spy on connected clients Use server and client-side attacks to hack and control remote computers Control a hacked system remotely and use it to hack other systems Discover, exploit, and prevent a number of web application vulnerabilities such as XSS and SQL injections Who this book is for Learning Ethical Hacking from Scratch is for anyone interested in learning how to hack and test the security of systems like professional hackers and security experts.

Writing and running software is now as much a part of science as telescopes and test tubes, but most researchers are never taught how to do either well. As a result, it takes them longer to accomplish simple tasks than it should, and it is harder for them to share their work with others than it needs to be. This book introduces the concepts, tools, and skills that researchers need to get more done in less time and with less pain. Based on the practical experiences of its authors, who collectively have spent several decades teaching software skills to scientists, it covers everything graduate-level researchers need to automate their workflows, collaborate with colleagues, ensure that their results are trustworthy, and publish what they have built so that others can build on it. The book assumes only a basic knowledge of Python as a starting point, and shows readers how it, the Unix shell, Git, Make, and related tools can give them more time to focus on the research they actually want to do. Research Software Engineering with Python can be used as the main text in a one-semester course or for self-guided study. A running example shows how to organize a small research project step by step; over a hundred exercises give readers a chance to practice these skills themselves, while a glossary defining over two hundred terms will help readers find their way through the terminology. All of the material can be re-used under a Creative Commons license, and all royalties from sales of the book will be donated to The Carpentries, an organization that teaches foundational coding and data science skills to researchers worldwide.

Learn how to write high-quality kernel module code, solve common Linux kernel programming issues, and understand the fundamentals of Linux kernel internals Key Features Discover how to write kernel code using the Loadable Kernel Module framework Explore industry-grade techniques to perform efficient memory allocation and data synchronization within the kernel Understand the essentials of key internals topics such as kernel architecture, memory management, CPU scheduling, and kernel synchronization Book Description Linux Kernel Programming is a comprehensive introduction for those new to Linux kernel and module development. This easy-to-follow guide will have you up and running with writing kernel code in next-to-no time. This book uses the latest 5.4 Long-Term Support (LTS) Linux kernel, which will be maintained from November 2019 through to December 2025. By working with the 5.4 LTS kernel throughout the book, you can be confident that your knowledge will continue to be valid for years to come. This Linux book begins by showing you how to build the kernel from the source. Next, you'll learn how to write your first kernel module using the powerful Loadable Kernel Module (LKM) framework. The book then covers key kernel internals topics including Linux

kernel architecture, memory management, and CPU scheduling. Next, you'll delve into the fairly complex topic of concurrency within the kernel, understand the issues it can cause, and learn how they can be addressed with various locking technologies (mutexes, spinlocks, atomic, and refcount operators). You'll also benefit from more advanced material on cache effects, a primer on lock-free techniques within the kernel, deadlock avoidance (with lockdep), and kernel lock debugging techniques. By the end of this kernel book, you'll have a detailed understanding of the fundamentals of writing Linux kernel module code for real-world projects and products. What you will learn

- Write high-quality modular kernel code (LKM framework) for 5.x kernels
- Configure and build a kernel from source
- Explore the Linux kernel architecture
- Get to grips with key internals regarding memory management within the kernel
- Understand and work with various dynamic kernel memory alloc/dealloc APIs
- Discover key internals aspects regarding CPU scheduling within the kernel
- Gain an understanding of kernel concurrency issues
- Find out how to work with key kernel synchronization primitives

Who this book is for This book is for Linux programmers beginning to find their way with Linux kernel development. Linux kernel and driver developers looking to overcome frequent and common kernel development issues, as well as understand kernel internals, will benefit from this book. A basic understanding of Linux CLI and C programming is required.

This is the eBook version of the printed book. If the print book includes a CD-ROM, this content is not included within the eBook version. Advanced Linux Programming is divided into two parts. The first covers generic UNIX system services, but with a particular eye towards Linux specific information. This portion of the book will be of use even to advanced programmers who have worked with other Linux systems since it will cover Linux specific details and differences. For programmers without UNIX experience, it will be even more valuable. The second section covers material that is entirely Linux specific. These are truly advanced topics, and are the techniques that the gurus use to build great applications. While this book will focus mostly on the Application Programming Interface (API) provided by the Linux kernel and the C library, a preliminary introduction to the development tools available will allow all who purchase the book to make immediate use of Linux.

This volume is the official reference manual for GNU Bash, the standard GNU command-line interpreter.

Beginning Linux Programming, Fourth Edition continues its unique approach to teaching UNIX programming in a simple and structured way on the Linux platform. Through the use of detailed and realistic examples, students learn by doing, and are able to move from being a Linux beginner to creating custom applications in Linux. The book introduces fundamental concepts beginning with the basics of writing Unix programs in C, and including material on basic system calls, file I/O, interprocess communication (for getting programs to work together), and shell programming. Parallel to this,



the book introduces the toolkits and libraries for working with user interfaces, from simpler terminal mode applications to X and GTK+ for graphical user interfaces. Advanced topics are covered in detail such as processes, pipes, semaphores, socket programming, using MySQL, writing applications for the GNOME or the KDE desktop, writing device drivers, POSIX Threads, and kernel programming for the latest Linux Kernel.

Learn Linux Administration and Supercharge Your Career! If you're looking to make the jump from being a Linux user to being a Linux administrator, this book is for you! If you're in windows administration and want to learn the ins and outs of Linux administration, start here. This book is also great for Unix administrators switching to Linux administration. Here is what you will learn by reading this Linux System Administration book: How the the boot process works on Linux servers and what you can do to control it. The various types of messages generated by a Linux system, where they're stored, and how to automatically prevent them from filling up your disks. Disk management, partitioning, and file system creation. Managing Linux users and groups. Exactly how permissions work and how to decipher the most cryptic Linux permissions with ease. Networking concepts that apply to system administration and specifically how to configure Linux network interfaces. How to use the nano, vi, and emacs editors. How to schedule and automate jobs using cron. How to switch users and run processes as others. How to configure sudo. How to find and install software. Managing process and jobs. How to make the most out of the Linux command line Several Linux commands you'll need to know Linux shell scripting What you learn in book applies to any Linux system including Ubuntu Linux, Debian, Linux Mint, RedHat Linux, CentOS, Fedora, SUSE Linux, Arch Linux, Kali Linux and more. Real Advice from a Real, Professional Linux Administrator Jason Cannon is the author of Linux for Beginners, the founder of the Linux Training Academy, and an instructor to over 40,000 satisfied students. He started his IT career in the late 1990's as a Unix and Linux System Engineer and he'll be sharing his real-world Linux experience with you throughout this book. By the end of this book you will fully understand the most important and fundamental concepts of Linux server administration. More importantly, you will be able to put those concepts to use in practical real-world situations. You'll be able to configure, maintain, and support a variety of Linux systems. You can even use the skills you learned to become a Linux System Engineer or Linux System Administrator.

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