

I'm not robot!

Whether you're new to writing scripts or you've been using Bash for years, there's always something to learn. Boost your scripting skills with these guides, tutorials, and examples. Posted: September 27, 2021 | 94 min read | by Jose Vicente Nunez (Sudoer) Learning a scripting language is an intimidating task. It also takes time because practice is the only way to master a skill properly, and you will need to do and redo your code to learn new techniques and fix your mistakes. By the end of this article, you will have: A list of online tutorials to sharpen your skills A reference guide for Bash scripting Best practices to write code and make it more secure Resources to edit and execute Bash scripts when you don't have access to a Linux machine This is not a complete guide, but it will serve as a starting point to more resources. Online tutorials Nothing beats a detailed explanation from someone more experienced, especially if it includes examples. Here are some tutorials to check out: Bash scripting tutorial for beginners: Linuxconfig.org's tutorial is ideal if you want to quickly learn the basics with examples, divided by topic. Learn Shell: This interactive Shell Programming tutorial ranges from basic to advanced skills with lots of examples. Enable Sysadmin: The website you're on has many practical articles (like this one). You may find a few of mine here, with open source code. FreeCodeCamp: These tutorials cover Bash and many other languages. Be prepared to spend days browsing this one. Reference guide Sometimes you want to learn how to perform a specific task without distractions. To learn the official way of solving things, as they say, RTFM (read the fine manual): GNU Bash reference manual: This is the bible of Bash and includes concise examples, organized by topic. You will keep coming back to this guide over and over. Also, if you are on Linux, learn to use these two commands: # 'The GNU Bash Reference Manual', for 'Bash' info bash And: # bash - GNU Bourne-Again Shell man bash [Another one to add to your list: A sysadmin's guide to Bash scripting.] Check your Bash code You want to learn how to write efficient code, avoid common mistakes, and make sure your scripts are secure. Fear not, there are plenty of resources out there to learn basic and advanced skills, including: ShellCheck: I recommend installing this shell script static analysis tool. You can use it online, but its true power comes when you integrate it with Vim or IntelliJ IDE. You may wonder how you managed to live without it for so long. OWASP command injection page: Command injection is commonly used to elevate privileges on scripts or programs that do not sanitize user input. The Open Web Application Security Project (OWASP) is an international nonprofit that tracks security vulnerabilities to help people avoid repeating them. I find it helpful to be familiar with this list of risks, like the infamous Shellshock, so I don't repeat them in my scripts. Code repositories The following repositories contain Bash scripts written so that you can learn specific topics by checking the code. All the code is open source, and you can copy and paste the examples to learn. Complete Bash shell scripting: This is a nice code repository published by Packt with examples organized by topic. Udemy practice script repository: What could be better than learning about Bash programming by example? This repository from Udemy's course on shell scripting is nicely organized by topic. Each script topic is small and self-describing. shell-scripting-examples: This is a cookbook of common tasks in Bash (like reading from a property file or accessing a MySQL database). These examples are well worth checking out. Keep in mind that code in repositories like GitHub may contain bugs. Also, be very careful not to download and run code as the superuser, or you may find yourself in a pickle. [Don't miss Stupid Bash tricks: History, reusing arguments, files and directories, functions, and more.] Run code online What if you want to try something but you don't have access to Linux or Unix? This is less than ideal, but you can try a few online resources with very nice front ends to run your scripts, such as: MyCompiler.io: This site provides syntax support, lets you run code from your browser, and supports multiple languages. It's very convenient, especially if you don't have access to Linux to test a simple script Bash online compiler: You can run Bash scripts directly from your browser, with a few restrictions, on this site. It also has good syntax color support. LeetCode: This site has a nice playground where you can write scripts in Bash (and many other languages). If you want, you can try to solve some of its challenges (with paid and free subscription options). Become a better programmer These online resources can help you become a better Bash programmer. Some other things to keep in mind: Learn basic concepts by looking at the online tutorials but always check the reference guides. They are the most trustworthy (well, almost always). Avoid common mistakes by checking the ShellCheck and OWASP websites. You will thank yourself later. Learn by example by looking at how others solve common problems (in places like GitHub). Also, if you find a bug, contribute and report it or, even better, submit a patch. Don't forget that practice is the best way to learn something, so go ahead and start writing a few scripts! Topics: Bash Scripting Career Programming Proud dad and husband, software developer and sysadmin. Recreational runner and geek. More about me Get the latest on Ansible, Red Hat Enterprise Linux, OpenShift, and more from our virtual event on demand. OUR BEST CONTENT, DELIVERED TO YOUR INBOX Hello guys, you might know that a massive chunk of a developer's time is wasted in trying to repeat tasks and commands, especially when it comes to working with a bunch of UNIX or Linux machines, and a good knowledge of shell scripting can free you from such mundane task and give time to do some interesting stuff. If you don't know what shell scripting is then let me tell you is nothing but a program written using shell built-ins, and Linux commands to automate things, like checking if a host is reachable or finding and deleting large files that are older than certain days or archiving them into another machine. Basically, it's a tool that allows you to automate boring and repeating tasks, and that's the way programmers should work. They should not be repeating stuff; instead, they should be investing that time to create a script or program which can automate that task. I always ask programmers, developers, and system admins to learn and master shell scripting because it's one of the skills which not only saves time and increases productivity but also separates yours from average programmers who don't have a passion for automation and are not good with their tools. I'll give you one of the real-world examples from my career. Once I was working on a project which had around 40 Linux hosts where our Java application was installed. After one big release, we realized that one config change was missed, and there wasn't enough time to do it a proper way, i.e. to create another build and load into the deployment tool (we're using Opsware that time) and release again. So, we decided to manually make the change in all 40 hosts. I started doing changes, and 10 minutes later, my tech lead came to me and ask all done? I said, well, I have just started; only two servers are done now. He looked at me with curiosity and asked how I am doing the changes?. I told him that I am going to each box, opening the config file in Vi editor, and then making the change. He took control from me, make the change in the config file, and writes a script to copy that file to all 40 servers, which took just 2 minutes to him, and run it another 1 minute and all done. I was surprised why I didn't think about that, but my lack of Linux knowledge and shell scripting prevented me. That day I realized that if you want to improve your productivity and impress your colleague, then you must be good at your tools, and shell scripting is one of them. Now that you know what is shell scripting and why a programmer should learn shell scripting, it's time to go to the next level, how do you learn shell scripting? Or how can you improve your shell scripting skills in Linux? Well, an online training course is a good starting point, followed by the book for more comprehensive learning. Earlier I have shared some of the essential UNIX programming books and courses, and today, I am going to share some of the best online courses to learn Shell scripting in Linux. This is one of the best courses to learn shell scripting from scratch, particularly if you don't have much experience in shell scripting and automation. The course is well laid, and it's neither very long nor very short, which means you will learn essential knowledge in a quick time and start creating scripts in no time. By the end of this course, you will be able to create shell scripts with ease. You'll learn how to take tedious and repetitious tasks and turn them into programs that will save you time and simplify your life on Linux, Unix, or MAC systems. Here is the link to join this course: Shell Scripting: Discover How to Automate Command Line Tasks The course teaches essential shell scripting techniques like - checking the exit status of programs and commands and how to make effective use of them in shell scripts. - how to accept input from the user - how to write conditional statements and loops in shell scripts - real-world examples of shell scripts from his collections. - practice exercise and quizzes. In short, one of the best courses to learn shell programming for Linux, Unix, and Mac. This is one of the most complete courses to learn shell scripting in Linux using the bash shell. In this course instructor not only explains basics like what is a shell or what is bash and how it is different from just typing the command in the command line but also goes on to show you how can automate your day-to-day task using shell scripts. The course teaches you how to write bash scripts, explains how command history, echo commands, and variables work in bash, operators, loops, statements, and all other concepts you need to write complex shell scripts to automate repetitive tasks. Here is the link to join the course: Linux Shell Programming for Beginners In addition to providing you with all the theoretical information about BASH and Shell Scripting, the course also provides many examples at every step to get you familiar with how shell scripting works and what happens when you execute a particular shell script. In short, a fantastic course to 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. Additionally, you can download all the scripts that were used by the instructor to try on your own. If you are looking for best Coursera course to learn Linux then you will love this Linux course which is created by none other than Red Hat itself. As I have told you before, Coursera is the best place to learn from authorities like Google, IBM, AWS and this is another course which is created by a top company, Red Hat which is behind the most popular flavor of Linux used commercially. This course will teach you Linux Fundamentals using RedHat Enterprise Linux 8. You will learn how a Linux system is organized, and see how common system administration tasks are performed, which you will be able to practice on your own as well. After completing this free Linux course on Coursera, you will have solid understanding of how to work with Linux from the command line, using Red Hat Enterprise Linux 8 as a model. You can also apply for developer and System admin jobs after completing this course. By the way, if you are planning to join multiple Coursera courses or specializations, then consider taking a Coursera Plus subscription which provides you unlimited access to their most popular courses, specialization, professional certificate, and guided projects. This is one of the comprehensive course to learn shell scripting or shell programming in Linux, particularly with the bash scripts. In this course, you will learn basics like creating and using variables, shell built-in commands and operators, conditionals, loop, checking exit status, and taking input from the user but also advanced concepts like performing text and string manipulation, processing multiple command-line arguments, and error handling. Here is the link to join this course: Linux Shell Scripting: A Project-Based Approach to Learning The best part of this course is that it's project-based, which means instead of learning bits and pieces of information, you'll write actual shell scripts that you can use in real-world situations. You get the chance to immediately put what you learn to use so that you fully understand and remember it. This is one of the best interactive courses on Linux Bash scripting and command lines. If you are working in windows and don't have access to a Linux machine for practice then don't worry this interactive bash course from Educative allows you to practice Linux commands in the browser. Shell scripting allows us to use the shell's abilities and to automate a lot of tasks that would otherwise require a lot of commands and by joining this bash scripting course for programmers, you can start writing bash scripts from word go, no need to set up a virtual box or a Linux machine for practice. Here is the link to join the course: Bash for Programmers Bash scripting will help you automate routine tasks and save valuable time, whether you're a sysadmin, Linux user, or software developer. A shell script is much quicker than programming in any other language.And, if you find the Educative learning platform and their interactive, text-based courses like Grokking the System Design Interview then consider getting an Educative Subscription which provides access to their 100+ courses for just \$14.99 per month (70% discount now). It's very cost-effective and great for preparing for coding interviews and learning essential tech skills. Linux has many shells Like Bourne shell (sh), C shell (csh), Korn shell (ksh), and Bourne Again shell popularly known as bash. It incorporates useful features from ksh and csh shell. Bash is not only an excellent command-line shell but a scripting language in itself, and this course helps you to realize the full potential of bash and Linux commands. Here is the link to join the course: Shell Scripting with Bash In this course, you will not only learn how to use bash for writing shell scripts, all the shell scripting basics including input and output, using variables, conditional execution, writing loops, string manipulation, but also learn several useful Linux commands in a quick time. Generally, anyone takes ages to discover those commands without any guidance, but this course teaches you in a couple of hours. By the way, you would need a Pluralsight membership to join this course which costs around \$29 per month or \$299 per year (14% discount). It's worth money because it provides instant access to more than 7000+ online courses to learn any tech skill. Alternatively, you can also use their 10-day-free-pass to watch this course for FREE. That's all about some of the best shell scripting courses for programmers and Linux users. Automation is a really important skill, and as your experience and responsibility grow, you will appreciate automation more. A good knowledge of shell scripting using bash in Linux or using Python or Perl or any other scripting language goes a long way to improve your productivity while working as IT professionals. Other Online Resources for Programmers and Developers you may like Thanks for reading this article so far. If you like these best Linux shell scripting courses, then please share them with your friends and colleagues. If you have any questions or feedback, then please drop a note. P. S. - If you are looking for some free online courses to kick-start your Linux shell scripting journey then don't get sad. I have also shared some of the best free courses to learn bash scripting in Linux earlier, you can check them out as well. The bottom line, learn shell scripting to become a more valuable programmer.

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