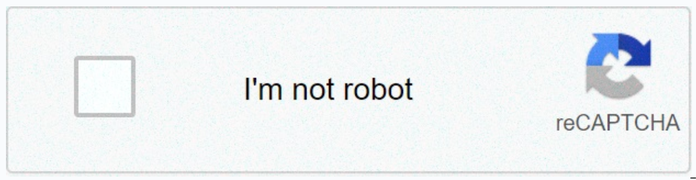

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Compiling c code in linux terminal

How do you program on C on Linux? It's really easy and consists of three simple steps. Step 1: Type your program and save .c file with a new extension. For example, my_program.c. Step 2: Compile the program and create the object file using the gcc compiler: gcc - o my_program my_program.c Step 3: Run the object file created to run your C program on Linux: ./my_program This was a quick summary of how to compile and run program C on Linux. If you are new to C or Linux, I will show you these steps in detail so that you can comfortably encode the C program in the Linux environment. In fact, we will discuss how to run C programs on the Linux terminal as well as the code editor. Method 1: How to run C programs on a Linux terminal To run a C program on Linux, you must have a C compiler on your systems. The most popular compiler is gcc (GNU Compiler Collection). You can install GCC by using the package manager for your deployment. In Debian and Ubuntu-based Linux distributions, use the apt command: c install gcc Switch in the directory where you hold your program (or provide the path), and then compile the program to create the object file: gcc -o my_program my_program.c Note that it is optional to provide the output object (-o my_program). If you do not, an object file named a.out is automatically created. But that's not good because it's going to be over written for every C program, and you won't know which program the a.out object file belongs to. After you create your object file, run C to run it. It can already be executed. Simple use is as follows: ./my_program and if the program is correct, it displays the desired output. As you can see, this is not so different from the one that works C++ programs on Linux. Each time you make changes to your program, you must first compile it, and then run the object file created to run program C. Method 2: How to run Linux C programs using a code editor like Visual Studio Code everyone is comfortable with the command line and terminal and I fully understand. You can use a suitable C/C++ IDE, such as Eclipse or Code Blocks, but it's usually suitable for very heavy programs and larger projects. I recommend using an open source code editor, such as Visual Studio Code or Atom. These are basically text editors, and you can install plugins to compile and run programs directly from the graphics code editor. In this example, I use a Visual Studio Code editor. An extremely popular open source code editor of Microsoft. First, install Ubuntu Visual Studio Code from the software center. For other distributions, please check the package manager or software center for your Linux distribution. You can also check the official website for more information. Start Visual Studio Code, and then click create a project and a C program here. I'm using an exemplary Hello World program. You must make sure that you have a gcc compiler installed on your Linux system. Sudo apt install gcc is then use an extension that allows you to run the C code you want. Microsoft may want to install its extension for the C/C++ program but the installation is complicated and therefore I would not recommend it. Instead, we recommend that you use the Code Runner extension. It is a no-nonsense extension and you can easily run C and C++ code without additional configuration. Go to the Extensions tab and search and install 'Code Runner'. Restart C/C++ Install the Code Runner extension to run Visual Studio Code. Now, why run code C as follows: Use the shortcut to select Ctrl+Alt+N.Press F1, and then select run Code.Right, and then click Run Code on the context menu. Right-click the program file, and when you run the program, select Run Code, it is compiled and run automatically. You can see the output in the terminal that opens at the bottom of the editor. What could be better than that? Which method do you prefer in the subseth of the program output editor? It is ok to run several C programs at the Linux command line, but it is much easier to use a code editor and saves time. Don't you agree? I let you decide which method you wanted to use. The full form of Facebook 0 Twitter 0 LinkedIn 0 Reddit 0 Cep 0 GCC is the GNU Compiler Collection. GCC has compilers for programming languages such as C, C++, Objective-C, Ada, Go, Fortran, and more. All of this is open to open source and is free of charge. This article will show you how to install GCC and compile Linux C programs using GCC. I'm going to use the Debian 9 Stretch for the show. But you will show you how to install a wide range of Linux distributions GCC. Let's get started. In Ubuntu and Debian GNU/Linux distributions, GCC is really easy to install, as all the necessary packages are available in the official package store of Ubuntu and Debian. The Ubuntu and Debian GNU/Linux distribution has a meta pack called build-essential that installs everything you need to compile C and C++ programs. First, update the APT packet store cache with the following command: The APT packet store cache must be updated. Now install build-required with the following command: $sudo apt set up-base press now y and press to continue later <Enter> install. GCC must be established. Now you can check if the GCC works with the following command: Installing Linux Mint GCC: You can install Linux Mint gcc in the same way Ubuntu/Debian as shown in the previous section of this article. Installing GCC on CentOS 7 and Fedora: GCC is also easier to install. Required packages </Enter>CentOS 7 and Fedora's official package warehouse. You can install the Development Tools group to install all the packages required to compile C and C++ programs in CentOS 7 and Fedora. First, update the YUM database with the following command: The YUM database must be updated. Now install development tools group packages with the following command: $sudo yum group install Development Tools Press Now y, and then press <Enter>to continue. If you see this message, press y and then <Enter>.' press . GCC must be established. Now you can check if the GCC works with the following command: Installing GCC on Arch Linux: You can also install GCC on Arch Linux. All necessary packages are available in the Arch package store. Arch also has a meta package base devel that you can install to get all the necessary tools to compile C and C++ programs on Arch Linux. First, update the Pacman database with the following command: The Pacman database must be updated. In my case, it's already up to date. Now install the base-devel package with the following command: $ sudo pacman -S base-devel Press to select all of them if you do not want to install a very specific series of packages <Enter>now. You could see something like that. As far as I know, it's nothing serious. A renamed package from Pkg-config to pkgconf. Pacman asks you if you want to use the new package and take out the old one. Just press y, and then press <Enter>. Press y now, and then press <Enter>. GCC must be established. Now check if the GCC works with the following command: First write Program C: Now let's write a very simple C program, which we will compile in the next part of the following article using the GCC C compiler. First, create a project directory with the following command (I will call hello): Now go to the newly created directory with the following command: Now create a new C source file (I am going to search for the master.c) here with the following command: Now open the file with any text editor (vim, nano, gedit, kate, etc.) of your choice. To open the file with nano, run the following command: run the following command to open the file with vim: Run the following command to open the file with Gedit: Run the following command to open the file with Kate: I will use the Gedit text editor in this article. Now type the following lines and save the file. Here, row 1 contains the stdio.h header file. There is a function definition for the printf() function that I use in line 4. Each C program must have a main() function. C is the function that will be called when you run . If you do not type a main() function, you cannot run C. That's why line 3 wrote a main() function - line 7. Within the Main() function, I searched for the printf() library function in line 4 to print some text on the screen. olarak, doğrultusunda</Enter> </Enter> </Enter> </Enter> </Enter> </Enter> I returned 0 from the program. In the Linux world, when a program returns 0, it means that the program is run successfully. You can return any end of the line you want, but there are some linux-specific rules for what the check-in value means. In the next section, you will show you how to compile and run program C with GCC. Compiling and Running C Programs with GCC: Command to compile C source file with GCC: $ gcc -o OUTPUT_BINARYSOURCE_FILES NOTE: Here is a white space reserved list of SOURCE_FILES C source files. The compiled executable file is saved as OUTPUT_BINARY current working directory. In our case, the main.c source file is not connected to the other C source file, so we can compile it with the following command: Source file master.c must be compiled and hello executable file should be created, as you can see in the following screenshot. Now, hello you can run the executable binary as follows: As you can see, the correct output is printed on the screen. So basically how do you use GCC to compile C programs on Linux? Thank you for reading this article. To describe all the steps of the assembly, we need to clarify several programming concepts in advance. In this article we will consider what the C language is, how to compile it with a tool like gcc and what happens when we compile it. C programming languageAll software, programs, websites, and applications are written in a specific programming language. Basically, everything we see on the screen of our computers or smartphones is a large number of codes written in different languages and put together in a certain way. Each programming language has a different use, and today we will focus .C C.C. We call it low-level language, that is, there is very little abstraction between C and machine language, so it can be considered closer to the computer's hardware. C is also a compiled language, unlike what is interpreted, source files written in c must be compiled before they can be executed. Tools First of all, let's talk about the tools that we will use in our example. We will work on a Unix-like operating system, so the examples may be different from Windows. , we need access to the shell, a program that is commanded from the keyboard and gives them to the operating system. For this, we need a terminal or terminal emulator, which is a window that allows us to interact only with the shell. Inside the terminal, we must see the shell prompt, which includes your username and the name of the machine, followed by the PS1 environment variable, which usually has a $ character. After this character, we can enter commands that we call scripts. We also need a message. To create a source file, such as vi or emacs. AssemblyDerleme is a translation by a compiler into source code (the code we write) object code (an array of expressions in machine language). There are four different steps to the compilation process:PreprocessingThe assemblyThe compilingThe compiling is gcc, which means GNU Compiler Collection. The GNU project is a free software and collective collaboration project launched by Richard Stallman in 1983 that allows developers to access powerful tools for free. Gcc supports various programming languages, including C, is completely free and is the ready compiler of most Unix-like operating systems. To use it, we need to install the wall on our computer, if it is not there. Source code For example, let's take a look at the source code inside the file named main.c, where .cnin is usually a file extension that means that the file is written with a C. This image text editor vi:main.cIn tells the compiler to add the stdio.h title file in pink #include pre-processor directive, but we will come back later. There are comments about blue code, which is useful to remember what the moon actually does after you create it. We don't need them in such a small program, but it's a good practice to put them in. Then we have our entry point, the main() function. This means that the program will start by executing the expressions that are within the block of this function, among the curly inseot. There are only two phrases here: one that will print the sentence Hello to the terminal, The World, and the other that says return 0 if it is out of the program or finished. So after compiling, if we're going to run this program, we're just going to see the phrase Hello, Earth. In order .c code can be executed, we need to enter the gcc main.c command, and the compilation process goes through all four steps it involves. Of course GCC has options that allow us to stop the compilation process after each step. Let's take a look at them. StepsA user has several roles:get rid of all comments in the source file(s), c is a file with an extension that contains function declarations and macro definitions .h the output of this step according to the values of all macros (named pieces of code) is stored in a file with the .i extension, so here we will be in main.i.In order to stop compilation immediately after this step, we can use the main.i.In option on the source file, and press enter. The end of the Main.i file should look like this:2. CompilerDerer receives pre-processed file and creates IR code (Search so this will produce a .s file. Regarding this, other compilers can generate assembly code at this stage of the assembly. After this step, we can stop with the -S option in the GCc command and press enter. This is what the Main.s file should look like:3. AssemblerThe assembler receives IR code and converts code (i.e. binary) object code, in machine language. This will produce a file that ends with .o. After this step, we can stop the compilation process by using the -c option with the gcc command and pressing enter. Our main.o file should look like this (no, it's not human readable):4. The ConnectorThe binary creates the last executable and can play two roles: linking all source files together, that is, all other object codes in the project. For example, if I want to compile main.c.c with another file called secondary and convert them to a single program, this is the step in which secondary.c (secondary.o) object code will be linked to the main.c object code (main.o) connection function calls with definitions. The connector knows where to search for function definitions in static libraries or dynamic libraries. Static libraries are the result geeksforgeeks.org that sends copies of all library functions used according to the library functions to the executable file, and dynamic libraries do not require copying the code, only by placing the name of the library in the binary file. Note that GCC is used by default dynamic libraries. In our example, this is when the connector puts the definition of our function and connects it. By default, after this fourth and final step, that is, when you type the entire gcc main.c command without any options, the compiler creates an executable program called a.out that we can run by typeing ./a.out on the command line. We can also choose to create a program that can be executed by adding the -o option to the gcc command, adding the name of the file or the files we have compiled for n to the -o option, and pressing enter:If you do not use the -o option or the ./my_program option to run the code compiled now,./my_program, the output becomes Hello, Earth, and then the command shell appears again. The GNU Compiler Collection offers much larger tools for compiling and running our programs that deserve to be written about, but this article is about the basic steps of compilation. Maybe next time! It's time for resources! Source

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