

Hot tip

At a command prompt type `gcc --help` then hit Return to see a list of all compiler options.

Compiling a C program

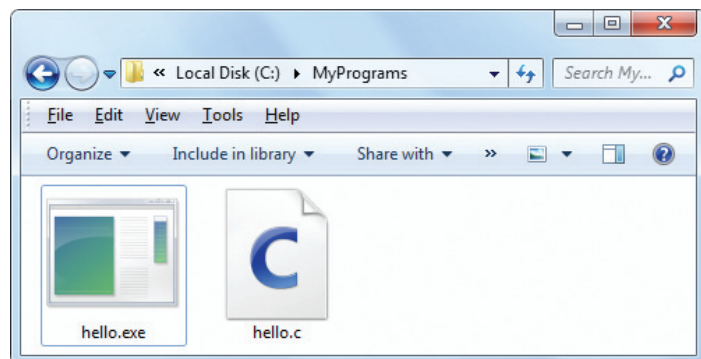
The C source code files for the examples in this book are stored in a directory created expressly for that purpose. The directory is named “MyPrograms” and its absolute address on Windows is `C:\MyPrograms`, whereas on Linux it’s at `/home/MyPrograms`. The `hello.c` source code file, created by following the steps on the previous page, is saved in this directory awaiting compilation to produce a version in executable byte code format.

- 1 At a command prompt issue a `cd` command with the path to the **MyPrograms** directory to navigate there
- 2 At a command prompt in the **MyPrograms** directory type `gcc hello.c` then hit Return to compile the program

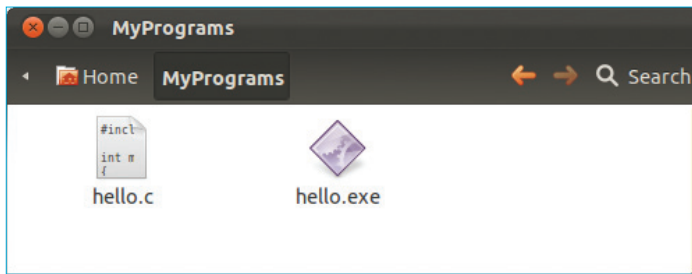
When the compilation succeeds the compiler creates an executable file alongside the original source code file. By default this file will be named `a.out` on Linux systems and `a.exe` on Windows systems. Compiling a different C source code file in the **MyPrograms** directory would now overwrite the first executable file without warning. This is obviously unsatisfactory so a custom name for the executable file must be specified when compiling `hello.c`. This can be achieved by including a `-o` option followed by a custom name in the compiler command.

- 3 At a command prompt in the **MyPrograms** directory type `gcc hello.c -o hello.exe` then hit Return to compile the program once more

On both Linux and Windows systems an executable file named `hello.exe` is now created alongside the C source code file:

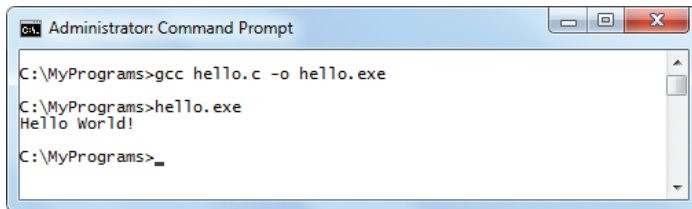


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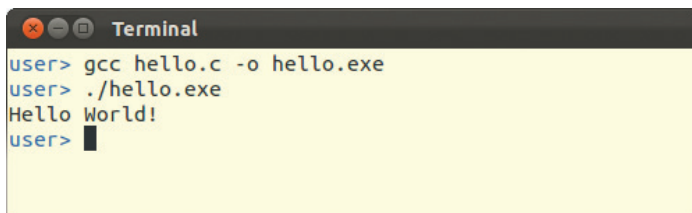
At a command prompt in Windows type the executable filename then hit Return to run the program – the text string is output and the print head moves to the next line



Because Linux does not by default look in the current directory for executable files, unless it is specifically directed to do so, it is necessary to prefix the filename with `./` to execute the program.

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At a command prompt in Linux type `./hello.exe` then hit Return to run the program – the text string is output and the print head moves to the next line



You have now created, compiled, and executed the simple Hello World program that is the starting point in C programming. All other examples in this book will be created, compiled, and executed in the same way.

Don't forget



If the compiler complains that there is no new line at the end of the file add a carriage return to the end of the source code, then save and re-try.

Hot tip



Windows users can even omit the file extension to run programs. In this case typing just `hello` is sufficient.