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### What is copyright and how does it apply to computer programming

Copyright is the right of the creator of a work to decide how the creation can be copied and who is allowed to do the copying. To have a copyright on a work requires three things. First it must be original, meaning you cannot copy others work and then claim it as yours. The second qualification for copyright is that the work must be creative, and lastly it must be fixed meaning that it must be able to be stored in a tangible manner. If the work meets the three requirements as soon as it is created the work is under copyrights and there is no need to formally submit a copyright claim. In the United States computer programs fall under literary works thus the programmer is given all the same rights that the author of a book would be given (4). With computer programs this does not only apply to the literal code that you write but also the structure, sequence and organization of the program. This means that you can still be infringing on someone's copyright without making a literal copy of a program. In 1889 the United States joined the Berne Convention which is an international treaty on copyright laws (3). This treaty grants protection to any work of a national of one of the countries of the Union and any works published either first or simultaneously in a nation belonging to the union (3). This in theory gives you the same protection as you have in the United States. However in practice it is much harder to issue a copyright take down to a foreign group than one within the US as there are more steps to go through.

There are many different types of software licenses which grant users the right to use your code some of the more popular ones are MIT license which has very few restrictions on what the user can do

with the code. A slightly more restrictive liveliness is the GPL which lets users use your code, but it must also be released under the same license. The most restrictive licenses are proprietary in which users are not allowed to modify or redistribute the code at all. As for what license I would use, it would depend on the type of project. If I were trying to make a profit, I would use a proprietary license as it is often much harder to make a profit when anyone can download and modify your code. If I were to write software just for fun, I would most likely use a copyleft license like the GPL which limits users to personal use only but also lets them modify the code. The ACM code of conducts says “Computing professionals should not unduly oppose reasonable uses of their intellectual works” so I would allow users to modify the code. The ACM code also says that “professionals should not claim private ownership of work that they or others have shared as public resources.” (1) Which is why the GPL requires that users who modify the code and want to redistribute their version of the code must release it under the same license that the original was, so if it was released for free it should stay free.

If I were to use someone else’s code as the ACM and IEEE codes of ethics both say that there should be some sort of credit given when you use others work but in the ACM code it also says that the creator should gain value from their work which implies something beyond simply giving credit to the original creator (1 & 2). When you use others code you must always follow the license agreement but when working on school or other similar non-profit project most licenses give you slightly more freedom than if the project is meant to make a profit.

“ACM Code of Ethics and Professional Conduct.” *Association for Computing Machinery*,  
<https://www.acm.org/code-of-ethics>

“IEEE Code of Ethics.” *IEEE*, <https://www.ieee.org/about/corporate/governance/p7-8.html>.

“Summary of the Berne Convention for the Protection of Literary and Artistic Works (1886).”  
*World Intellectual Property Organization*,  
[https://www.wipo.int/treaties/en/ip/berne/summary\\_berne.html](https://www.wipo.int/treaties/en/ip/berne/summary_berne.html).

“Copyright Law.” *Findlaw*, <https://corporate.findlaw.com/intellectual-property/copyright-law.html>.