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Copyright, Fair Use, and Computer Science

The Copyright Act of 1976 granted many rights to the owners of intellectual property. Those who owned a copyright could also allow others to have the same rights given to the owners of a copyright. However, it is less-known that the Copyright Act also gives the public rights. Specifically, these rights include (but are not limited to) the fair use provision, the ability for a copyrighted work to be used for educational purposes, and the ability of someone to resell or lend a work to others after they purchase it. Copyright protects a wide array of intellectual properties, like films, music, files and even programs.

The definition of a copyright, as derived from the U.S. Copyright Law, is as follows: "The exclusive rights to… reproduce the copyrighted works, prepare derivative works based upon the copyrighted work, to distribute copies of the copyrighted work, perform the copyrighted work publicly [if applicable], display the copyrighted work publicly [if applicable], and perform the copyrighted work publicly by means of a digital audio transmission [if applicable]" (p. 17). Regarding a program specifically, U.S. copyright law and the National Commission on New Technological Uses of Copyrighted Works (CONTU) proclaims that "it is the same as a novel, poem, play, musical score, blueprint, advertisement, or telephone directory. …All these works… are eligible for copyright…" (p. 65). As outlined by CONTU, U.S.

copyright law protects computer programs. Since U.S. copyright law protects programs, programs (and their creators) are entitled to the same rights and protections given to other copyrighted works. This can be problematic for programmers, as code is typically shared and spread between users as a standard industry practice.

Due to the issue of copyright protections for programs, a solution was created that would allow other programmers to use parts of a program in their works. The solution, open source licenses, allow for parts of a program to be publicly used. The degree to which a program is available for public use varies for each license, but the licenses generally grant programmers the ability to use parts of the project with the license within their own works. There are a few requirements to do so. For example, as listed on Choose a License, the MIT license, "only require[es] preservation of copyright and license notices" for the code in the program to be used. For most of my programs, the MIT license would be the license I would use due to the license being extremely permissive, which is appropriate for the kind of programs I will be making. There are some instances where a different license, likely the GNU GPLv3, would be a better fit due to the GNU license being slightly less permissive regarding closed source code.

Concerning computer science, there are two codes that serve as guidelines for professional activities. These codes, the ACM Code & the IEEE Code of Ethics, are alike with a few key differences. Both the ACM and IEEE codes, generally speaking, say the same key things. For instance, the writers of the ACM code proclaim that "[c]omputing professionals should be forthright about any circumstances that might lead to either real or perceived conflicts of interest…" (Section 1.3). Similarly, the writers of the IEEE code state professionals should "avoid real or perceived conflicts of interest whenever possible, and to disclose them to affected parties when they do exist" (Section I, 3). There are numerous similarities between the codes

regarding the statements made within each code. The similarities end, however, when discussing the target audience for the codes. While both codes may be applicable to any given program, the ACM focuses more on those in the computer science field specifically. Conversely, the IEEE is a much more broad organization, and thus has a much broader target audience. Regardless of the minor differences, both codes are written to promote professionalism, ethical actions, and (as mentioned in the ACM code) advancement for the public good.

As stated in both codes, it is paramount for an individual to always keep the public in mind when working on, in this case, a program. Regardless of whether a person is a professional or not, thinking about the ethics of creating a program is a good habit to have. If you were hired to create a program, but found out that the program would be used for unlawful reasons, the ACM and IEEE codes would have you refrain from creating the program. This would be the ethical and morally right decision, as otherwise you and your program would be in violation of the code(s). If unsure about a specific situation, it is best to review one of the codes and think about how your actions could affect the public good. If you come across a program that violates the code, the best course of action is to submit a complaint to the ACM or IEEE.

When reusing code from the internet, there are some obligations that the person reusing the code has as a programmer. Similarly to how sources are cited in academic works, whenever code is reused, the programmer reusing the code must cite the author of the original code in order to credit the author for their creation. As outlined by the University of Arkansas, to reuse someone's code you must list the "Author(s) name (Individual or corporation), Date, Title of program/source code, Code version, Type (e.g. computer program, source code), Availability (e.g. program publisher, URL)" in a comment above the location of the reused code. This gives proper credit to the original author and ensures that user is not plagiarizing the code they reused.

Works Cited

"Choose an Open Source License." *Choose a License*, GitHub, choosealicense.com/.

"Computer Science & Computer Engineering: Citing Programming Code." *Research Guides*, University of Arkansas, 28 Jan. 2022, uark.libguides.com/CSCE/CitingCode.

Copyright Act of 1976 § 101, 17 U.S.C. § 106 (2021)

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