Jeff Wedding

CSCI 325

Professor Henderson

4 April 2022

The Biggest Dilemma I Will Face as a Programmer

The biggest dilemma that I, and presumably most other programmers, will face in our careers is whether or not to reuse someone else's code. "Code reusability is the use of existing code to build new software applications. The existing code may be reused to perform the same function or may be repurposed to do a similar but somewhat different function providing for efficiencies, cost savings, adherence to standards and improved overall quality."(Skaffolder) Chances are, most programmers will have to reuse code at some point in their career. As Skaffolder mentions, there are plenty of benefits to it. Of course, this should come with an abundance of caution. If a programmer is having trouble developing a program, they may think it is fine to use a small part of someone else's program, as long as they don't copy the whole thing. Honestly, I thought the same thing before I did research. The concern with this is that using code and algorithms developed by others, unless properly given credit, violates the law and ethics of computing (Sweeney). This is why it is so important for employers to educate their workers on the rules of using code developed by others. The source code, object code, algorithms, and "look and feel" of a program can be owned. The unlawful copying of these things is called software piracy, and software companies today claim to lose billions of dollars per year because of it ("Topics in Computer Ethics"). That is a good reason why we should all care about this issue, even if it doesn't appear to affect us; it could lose your company a great deal of money.

Luckily, there are many resources that touch on reusing the code of others and tell us how to go about it. The best way to ensure a programmer does not run into legal or ethical trouble reusing code is to get educated through sources such as the ACM Code of Ethics or the IEEE Code of Ethics. The ACM and IEEE codes of ethics are collections of principles and guidelines designed to help computing professionals make ethically responsible decisions in professional practice. They are similar and different in a number of ways. While the IEEE Code of Ethics is very broad and only lists ten principles, the ACM Code of Ethics is composed of 25 ethical principles and is more specific. The ACM Code of Ethics is made up of four sections: general ethical principles, professional responsibilities, professional leadership principles, and compliance with the code. Both codes of ethics, however, list many of the same principles, such as not engaging in the discrimination or harassment of others and protecting the privacy of others. Both of these codes of ethics touch on reusing code. Principle 1.5 of the ACM Code of Ethics reads, "Computing professionals should therefore credit the creators of ideas, inventions, work, and artifacts, and respect copyrights, patents, trade secrets, license agreements, and other methods of protecting authors' works." (ACM Code of Ethics) Furthermore, principle five of the IEEE Code of Ethics states that programmers should, "credit properly the contribution of others." (IEEE Code of Ethics) I feel prepared and knowledgeable about reusing code, as I have already taken action to do so; I have read over both the ACM and IEEE codes of ethics. One can never be too prepared, however, so I will look into even more sources to educate myself of the correct ways to reuse code and the dangers of doing so wrongly. Another possible course of action that could be taken to handle the potential danger of reusing code would be to completely avoid reusing code. This surprisingly goes against the ACM Code of Ethics. Principle 1.1 says that computing professionals are obligated to use their skills for the benefit of society. Therefore,

if you are creating a program, you should try your hardest to create it with the idea of it benefiting society as a whole. This means that you should reuse other code (legally, of course) if it means bettering the program.

Both the ACM Code of Ethics and the IEEE Code of Ethics have principles that are supported through scripture. Principle 1.4 of the ACM Code of Ethics, and principle 7 of the IEEE Code of Ethics are very similar. They both state that computer professionals should not discriminate against others and treat everyone fairly. This obviously goes hand in hand with what scripture tells us. 1 Peter 2:6-7 tells us, “Live as people who are free, not using your freedom as a cover-up for evil, but living as servants of God. Honor everyone. Love the brotherhood. Fear God. Honor the emperor.” (ESV) Furthermore, Matthew 7:12 says, “So whatever you wish that others would do to you, do also to them, for this is the Law and the Prophets.” (ESV) Both of these pieces of scripture tell us that we should treat others with respect and honor them. God sacrificed his only Son for each and every one of us. The least we can do is show his immense love through our actions. This is not the only principle, however, that is supported by scripture. Principle 1.3 of the ACM Code of Ethics says that computer professionals should be honest and trustworthy. Violation of this principle means that a professional has been deceitful, which clearly goes against God’s word. Psalm 36:3 reads, “The words of his mouth are trouble and deceit; he has ceased to act wisely and do good.” (ESV) It makes sense that many ethics principles are backed by scripture, as the Bible is the basis of our own “Code of Ethics” as Christians. Now we just need to spread the word to get everyone on the same page!

Bibliography

ACM. “ACM Code of Ethics and Professional Conduct.” 2018. https://www.acm.org/code-of-ethics.

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

Skaffolder. “Five Considerations for Code Reusability.” *Skaffolder*, Skaffolder, 26 Aug. 2019, https://skaffolder.com/blog/five-considerations-for-code-reusability/.

Sweeney, Matthew. “Ethical Dilemmas in Computer Science.” *ZDNet*, ZDNet, 11 Feb. 2022, https://www.zdnet.com/education/computers-tech/ethical-dilemmas-computer-science/.

“Topics in Computer Ethics.” *Topics in Computer Ethics*, https://people.clarkson.edu/~bjukic/BE-IT/Topics%20in%20Computer%20Ethics.htm#3.4.