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Ethics Paper

When determining how much software should be tested, there a few critical deciding components take place. Testing can make the software may make it more reliable, but it may also cause unforeseen impacts. Depending on what the software is used for if it could potentially cause harm to someone/something if the software is not tested enough. On the other hand, it can cause an increase in the price of the software, causing it to be too expensive to run/use.

When referring to the THERAC-25, the lack of testing from a computer programmer caused harm to a few people. On the other hand, it makes the treatment less expensive, allowing more patients to use. Depending on circumstances would decide if I were ever to use a similar treatment myself or not. If there is a high percentage of the success rate of the system (85 percent or higher) and there are no other successful treatments available, then I would use the treatment and encourage others to do the same. If the less expensive treatment is available, it is important to share any warnings or potential harm that may come from the software. It is stated in the IEEE Code of ethics; it says, “disclose promptly factors that might endanger the public or the environment” (IEEE). Having less expensive software would allow for those who would not have the funds for the better-tested system to have a chance to be treated. James 2: 2-4 states, “Suppose a man comes into your meeting wearing a gold ring and fine clothes, and a poor man in filthy old clothes also comes in. If you show special attention to the man wearing fine clothes and say, “Here’s a good seat for you,” but say to the poor man, “You stand there” or “Sit on the floor by my feet,” have you not discriminated among yourselves and become judges with evil thoughts?” This verse states that the poor are to be treated the same as the rich.

By only allowing the expensive treatment to be available would be taking care of the rich and not the less fortunate. By allowing both treatments to be accessible, it would save more lives. The THERAC-25 incident may have been prevented. One way is that the programmer could have asked the user every time they entered a key if they want to complete that action and give the description of that action. That way, the technician could have a chance to double-check their decision before potentially putting someone's life at risk. Another option that the company could have had is to have tested the system on a group of people. That does not necessarily mean that subjects would receive the treatment for free or be paid, but they could afford the treatment at a lower price. Doing so may have allowed for a similar incident to occur before the treatment is released for public use.

In my opinion, I do not believe that a certification process should be required for Software Engineers. The primary purpose of the certification is to test the basic knowledge of the engineer and to make sure that they can safely/correctly create. While requiring certification for computer engineers would be a great idea, it is somewhat unrealistic. First, there would have to be specific requirements that the software engineer would be required to meet within the examination. What would those requirements be? The exam could start as the basics of software engineering that most would have learned in college, but how would the exam cover all types of jobs that a software engineer could fill. How credible would the certification be if an engineer who works for a video game designer has the same accreditation as one who works for a hospital? Within the ACM Code of Ethics and Professional Conduct, it states many expectations that any computer professional should follow. For example, It says that a computer professional is to be honest and trustworthy. The code also states that a professional should only "perform work in areas of competence" (ACM).

Works Cited

“ACM Ethics.” *ACM Ethics*, <https://ethics.acm.org/>

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

“James 2, New International Version (NIV): The Bible App.” *Read the Bible. A Free Bible on Your Phone, Tablet, and Computer.*, <https://www.bible.com/bible/111/JAS.2.NIV>.