Amber Ramsey

Dr. Paul West

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How Much Testing is Enough?

When working, your company will give you a project to complete as well as a deadline, but the project will never be finished. Should the company give you more time to perfect the project, which will cost more money, or is the given deadline alright as long as the project works? To some, this question might not be that important, but what if it involved saving lives?

In 1982 the Therac-25 was created to help save lives. According to Wikipedia, “The Therac-25 was a computer-controlled radiation therapy machine produced by Atomic Energy of Canada Limited (AECL)” (Therac-25). This machine was involved in several accidents a couple years after it had been distributed; the patients involved in the mishap had been given extreme overdoses of radiation which caused serious injury or death (Therac-25). The accident occurred because of a programming error. The company that produced the Therac-25 had tested the machine to insure it works properly, but it is impossible to test for every error that could occur.

I believe if the product can save lives, it is feasible to release a version with less testing as long as it works if you follow the directions. The Association for Computing Machinery Code of Ethics states, “1.1 Contribute to society and to human well-being, acknowledging that all people are stakeholders in computing” (The ACM Code 2018 Task Force). More in depth meaning of this principle is that it, “...affirms an obligation of computing professionals, both individually and collectively, to use their skills for the benefit of society, its members, and the environment surrounding them. ” (The ACM Code 2018 Task Force). It might be more life-threatening to use a machine with less testing, but the people who need the machine might not be able to wait long enough for a more reliable version. When a person has a disease that could kill them, they look for any possibility of extending their life. If I was in a similar situation as many of the patients, I would use the Therac-25.

Non-software engineers are required to earn a certification as explained by Wikipedia:

Regulation and licensure in engineering is established … to encourage public welfare, safety, well-being and other interests of the general public and to define the licensure process through which an engineer becomes authorized to practice engineering … . (Regulation and Licensure in Engineering)

I do not believe software engineers need to go through a similar process as other engineers. All programming related fields should be taught to follow the Association for Computing Machinery Code of Ethics and the Institute of Electrical and Electronics Engineers Code of Ethics. These are very important principles that programming professionals should be pursuing. During the hiring process, companies assess a software engineer’s skills while also gauging knowledge from a portfolio and references. It is the companies judgement if they think the software engineer is reliable and will produce quality work.

There will never be a perfect program or software engineer. “An essential aim of computing professionals is to minimize negative consequences of computing ...” (The ACM Code 2018 Task Force). As long as the software engineers follows the Association for Computing Machinery Code of Ethics and the Institute of Electrical and Electronics Engineers Code of Ethics, then they will be doing good for humanity.

Works Cited

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