SE 494

Spring 2018

Portfolio Ethics Essay Assignment

Due date: March 30, 2018

Submission of portfolio Ethics Essay via Blackboard

Pick one of Therac-25 or VW emissions case study.

- Write a paragraph about what you might have done if you were a software engineer in that project?
- Write a paragraph about why you think Therac or VW engineers ended up doing what they did?

If I were a software engineer on the Therac-25 project, I would have done a few things differently including keeping the hardware interrupts in place and ensuring that testing was done properly for all software components involved. One key lesson I have learned through my studies at Iowa State is that even if your code logically makes sense or is even simple and "impossible" to mess up, thorough testing must always be done. That is true for even the most basic software, but especially in a project where people are undergoing medical treatments and lives are at risk it is vital that the software is tested in its entirety.

After testing, if my team and I found bugs that required more attention we would immediately report it to our managers and let them know that the product may be behind schedule due to bug fixes and further iterations of testing. I would not fear losing my job in this situation, as it is the right thing to do, and I would trust that my manager would agree and appreciate my decision to resolve these issues.

Switching from hardware to software interrupts was another big mistake that the engineers made when designing the Therac-25. The engineers reused code that they did not understand, which is not a promising idea, from the model that used hardware interrupts and then replaced those with software interrupts. In a project that carries so much risk to its users I think it would have been a better idea to keep the hardware interrupts because there is always a risk that software will malfunction, and that risk was too crucial in this project.

I think that the engineers on the Therac-25 project were lazy and overconfident in their work, which resulted in the failures that occurred. The code from the previous model worked perfectly fine, so the engineers on the team decided they could reuse the code in the next model without understanding what it did, and it would work again. In addition to that oversight, the team also failed to test the Therac-25 which contributed to the projects failure. Their laziness, and overconfidence again, led them to ignore testing which ended up becoming a fatal mistake.