

This assignment was very challenging, I had to break down all the test cases by running them through my reference monitor. Each attempt I basically looked at the first attack case seeing if my reference monitor was handling it correctly or if it was incorrect. I noticed immediately that many students used threading which my code did not account for so that was one of the first things I attempted to address. I attempted to fix this by locking each function so that the code would address each process one at a time rather than all at once. Then I addressed the multi writes and undos, which I did by keeping track of all writes and undos, making sure that I didn't undo the first right by mistake. The next thing I addressed was the editing of the file outside of the required length. I needed to monitor the offset and the buffer to stay within the boundaries and not access incorrect locations. Another issue I ran into was I was raising multiple exceptions that were considered illegal so I just changed those to not do that. I also addressed the issue of users trying to open the same file multiple times or close them multiple time. I'm sure my reference monitor still has many vulnerabilities but this assignment made me think differently about how security works and how even though writing and undoing a simple file can have many security flaws that can easily be overlooked if you do not take the time to analyze and identify them. Simply closing a file and making sure that the user can no longer make changes to said file is an aspect you need to think about so although I feel like I did not do to well on a coding side it was still a good experience.