

CS-UY 3923: A2-3

Syntax: I started off by correcting my syntax error. Nothing would run so any attack would've passed through it, which made my security layer break everything from the get-go. Instead of using the keyword 'with' to handle my locks, I acquired a lock at the beginning of every method, and released them as I went. This meant that anytime I raised an exception, I would also release the lock before the exception as to avoid a gridlock.

EOF Size: As well, my EOF tracking was a little off after an undo – it would return the EOF size before the undo, but before the valid write as well. This managed to allow invalid `wreatat()`'s through my security layer which made it vulnerable to EOF attacks. So, the way I kept track of the EOF size, was that if the current length of the writing data + the offset was greater than the previous EOF size, then it's updated. I also kept track of the `file_size` before committing and reset the actual `file_size` equal to the `old_file_size` after an undo to avoid the issue I addressed before.

Error Hierarchy: Furthermore, I found out that my exception hierarchy was wrong. This made my program misleading as to what kind of error should've been addressed, making it vulnerable to attacks. Instead of raising the `RepyArgumentError` first, I raised `FileClosed`. I rearranged my exceptions in `wreatat()` to deal with this. (New Order: `RepyArgumentError`, `FileClosedError`, EOF)

Locks & Threading Problems: Majority of the other attackcases that were successful against my monitor related to threading. I added locks in the appropriate places like `wreatat()` and `undo()`. We didn't care about `readat()` taking turns since we weren't modifying the file so I didn't add locks there.

Close: `close()` was another scenario that I had to fix with locks. So before, I had no locks on it because I was getting into a deadlock when I added a lock and tried to commit the `wreatat()`. So instead, I added the locks and this time committed the `wreatat()` using the original `wreatat()` instead of my wrapper method. Then raised any exceptions with a `try/finally` block to release the lock afterwards.