**Difficulties Navigating the Project:**

Okay, let's be honest – this project threw some curveballs my way. Here's the lowdown on the main hurdles I had to tackle and the troubleshooting adventures I went on:

1. The Case of the Confusing Error Messages (Character Limit Issue #7)  
link: https://github.com/k-0016/user\_management\_v1/issues/7

Picture this: a user going ham on a form field, completely unaware they're way past the character limit. Then – bam! Some cryptic error message that leaves them scratching their heads. Not ideal. So, I dug into the code's guts, reworked the validation part, and basically made those error messages a whole lot clearer. Now users know exactly what they did wrong.

2. Ghosting Errors (Email Uniqueness Issue #6)

Link: https://github.com/k-0016/user\_management\_v1/issues/6

Imagine trying to update a user's email to one that's already taken. You hit save, and... nothing. No warning, no angry red text. It was like the error message disappeared into thin air. After poking around in the back-end logic, I finally trapped that sneaky duplicate email issue. Now, there's no way a user can update with an existing email without getting a proper heads-up.

3. When Numbers Go Negative (List User Issue #5)

Link: https://github.com/k-0016/user\_management\_v1/issues/5

Okay, this one was a bit of a head-scratcher. Throw a negative number at the user listing function, and it would just stare back blankly. Clearly, it was time to teach the API some manners. A bit of input validation and error handling later, and that bad behavior is history.

4. Blank Passwords: A Security Nightmare (Registration Issue #4)

Link: https://github.com/k-0016/user\_management\_v1/issues/4

This one made me cringe. People were registering with no passwords! Like, come on. Obviously, this had to be fixed ASAP. After a full security audit, the registration process got a much-needed password strength overhaul. Now it's impossible to create an account without a proper password.

5. The Broken Email Verification Saga (Issue #2)

Link: https://github.com/k-0016/user\_management\_v1/issues/2

This one turned into a full-on debugging marathon. Emails not sending, tokens not working... the whole nine yards. It might not be 100% fixed yet, but I traced the problem back to [describe what you suspect is causing the issue – email config, token generation, etc.].

What I Learned (The Hard Way)

Validate everything, trust nothing: Every field, every input, needs to be checked and double-checked. Users will find ways to break your code you never imagined.

Errors are your friend (well, kinda): They might be annoying, but they tell you what's wrong. Clear and helpful error messages make everyone's lives easier.

Test, test, and test again: I would have saved myself some headaches if I'd caught these things earlier with better testing.  
 **Feature Implemented:**

I implemented robust User Search and Filtering functionality, focusing on the back-end integration to allow administrators to locate users by nickname, email, role and status. The sorting and pagination functionality was also added. There was feature of sorting to be done by a sort\_key(id). Sorting with asc and desc is also added. The feature is implemented with its necessary test cases(link to branch with feature: https://github.com/k-0016/user\_management\_v1/tree/user-search-feature)  
  
In conclusion, each challenge brought invaluable insights and growth opportunities, ultimately leading to better error handling, improved security, and a more comprehensive user management system. There were total of 108 test cases implemented with original 93 and 15 test cases from my end.