

Random Testing Quiz

I implemented the two functions `inputChar()` and `inputString()` to give somewhat random returns. For `inputChar()`, the return is any character from the ascii table at random using the `rand` function. This is because it usually takes a negligible amount of time to get through the first nine if statements, even when the random pool is the entire ascii table. However, for the `inputString()` function I had to restrict the input to be a random character in the lowercase alphabet from e to t. This includes the necessary characters without too much code for the implementation. I did this to reduce the run time of the test as I was having several runtimes over five minutes when using the entire lowercase alphabet. I also used a set string size of 6, the five alphabetic characters and the null terminator, to reduce the complication of the tester even further and maintain a shorter runtime. This could be restricted even further to reduce runtimes even more, but that would require more code in the implementation of the test. This is the simplest I could think to make the code and still achieve the randomness and runtime parameters. As I am doing this as white box testing and have access to the source code, I could simply read the if statements and understand what characters have the opportunity to trigger the error and then only include those, but that would require a more complicated set of conditions in the `inputString()` function and remove a lot of the randomness of it. So, as it is, until the first nine conditions are met by the `inputChar()` function, the string doesn't matter. Once the nine characters have been achieved through a random generation from the pool of all ascii values, in order, then the string actually matters. After the state is set to nine by the ninth if statement, then the string has to be returned from `inputString()` as `"reset\0"`. Until this happens, the loop just continues to iterate. With this method it is impossible to know how long it will take, but through the statistics of it, it should consistently be less than five minutes.