

There are 2 functions that need to be implemented, the random character function and random string function.

Looking at the random character, this function should output a random character. Looking at what the character is used for, it is used to to advance the state. If a particular character is input into testme() the state advances, this character is determined by what state the function is currently in. So I choose to pick a random from the 256 possible character in extended ASCII. This means that there is a large range of characters that could be chosen. Also because there is only one character in any given any iteration there is a $1/256$ chance that the state will advance until the function gets to the last state.

Looking at the random string function, the string is used in testme() when the function in state 9 if the first 6 character match a preset string the function return error 200. So to check that longer string does not break things the string that I generate is 7 characters. Originally I wanted to check a wider range of characters but the number of combination gets out of hand rather fast. So to help the run time I am only making the string out of the 5 characters that are used in string that is being checked against. This got the run time down to a reasonable time.