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CS 362
Random Testing Exercise

Documentation

To complete this assignment, I went through the code from testme.c and translated each statement, line by line, from C code to Python script. The objective was to take the structures with their respective syntax in C and convert them over to the corresponding structures with their respective syntax in Python. I started out by converting the main blocks over. I converted the inputChar() method, the inputString(), and the main method from C to Python. The most complex method was the testme() method which had a large series of if statements as a part of the necessary execution of the code. I made sure to translate the logic from C to Python, accurately capturing the intended functionality going from one programming language to the other. Next, I implemented the inputChar() method and the inputString() method to randomly generate characters and strings, respectively. At first, I tried the code with all possible random characters and all possible random strings, but I realized that I needed to narrow this down in order to speed up the execution of the overall program. I ran the code repeatedly, slightly narrowing down the range of possible values until I was able to get the code to complete within the 5-10 minute window. In the generation of random characters, the code will generate all random characters from ASCII value of 32 (‘ ‘) to an ASCII value of 126 (‘~’), inclusive. The likelihood that an individual character matches is equal to 1/95. In the generation of random strings, the code will generate random strings of length 5 containing random combinations of the letters 'a','b','c','d','e','r','s','t','u','v', ten values which contain “result” as one possible permutation. The probability that the string matches “reset” is equal to 1/100000. Finally, I tested the code by running it through numerous iterations in order to verify that the code produces the desired output and runs correctly.