Kelly Tran

405808641

CS31

Project 3 Report

Obstacles

I had a hard time figuring out how to start the assignment, especially in the case of the boolean function. I wasn’t sure how to start off with the steps that made sure the input was valid or not. Once I understood how to umbrella the requirements under the while-loop, I could understand how to do the rest of the functions. For the rest of the functions, I was not sure how to increase the count and consider the characters as integers that one could add, but I read up more on ASCII numbers and figured out how to add up the values as integers.

Description of Code

I started off the code with the bool isValidQC(string results) and initialized “i” at 0. I opened up a while loop to make sure that every time we go through the code, I read the values less than the string size. I start the counters for the passes, defects, and tests at 0. To check if the string is valid or not, I read through the string from left to right, and the first thing is to see if the first character is capital “Q” or not. If not, then I return false, and if so, then I increment i so I move onto the next character. The character following the Q should not be a 0 and should be a digit, so that would return false if these two conditions were not met. I then started a for loop to calculate the digits as integers, and added the character at result[i] to the current value of countTest to add all of the tests together. I remembered to subtract the value of the character ‘0’ because I know that the value is 48 in the ASCII table, and I don’t want to misconstrue the data. I then opened up an if else statement to make sure the the data could be read with ‘p’ or ‘d’ next, and those results also did not start in leading 0’s and added up to generate the total values for passes and defects. I also made that if the counts for the passes and defects in each batch did not add up to zero, then the data should return false, but if not, then the whole boolean function should return true.

For the rest of the functions that would generate the pass, defect, total test case, and batch data, I made sure that the value of each of the functions could add up all the values. For pass, defect, test cases, I used for loops to increment i and have the reading go through the rest of the string length, and I had a for loop inside that to add up the count data and total it up at the end. For the batch data, and used a for loop for every time that the Q showed up to count the batches.

I just used the main function to test everything.

Test Cases

Q12d2p10Q12d3p9

Q2p2d0

I used these to test if the code was working properly, because these values should return true and the respective total amount of passes, defects, tests, and batches.

Q0p0d0

I used this to test if the code would return false, because it should detect first that there is a 0 following the “Q.”

Qpd

I used this to test if the code would return false, because it should detect that there is no digit following the Q (or p or d for that matter.)

Q4p1d3

I used this to test if the code would return false, because it should detect that the countPasses and countDefects should add up to countTests.

q4p2d2

I used this to test if the code would return false, because it should detect that the string did not start with a capital Q.

Q1p0d1 hi

I used this to test if the code would return false, because it should detect that there are extra characters.

Q4p00002d02

I used this to test if the code would return false, because it should detect that there are leading 0’s after the p and d.