PSET 3 Manufacturing Data String Decoding Exercise FAQ

Q: What is meant by "adequate comments and readability of your code?" Does this mean that we detail and justify what choices we made while coding, like "I chose to use a while loop here because..."?

The goal is to learn how to comment your code. As part of the scoring process, your TA will be reading your source. The comments you write should help them understand how and why you are doing it the way you do. There are countless different ways to solve this problem. The comments are also for you because you might well forget why you are doing the things you are doing in a few days when you return to complete your code.

Q. Can I use built-in string functions?

The rule is that you can use anything built-in. You are not allowed to use anything that requires an import. Having said that, if you use too many string functions to code this program, then the fun, the challenges, and the learning goals will be diminished. I decided not to penalize you if you choose to use Python's rich set of built-in string functions to do this assignment because I know there are students who know Python and programming well in this class. There are countless different ways to solve this problem. My recommendation is to use only len() and isdigit() or split(). For those of you who are learning programming and Python, my recommendation is to take this path:

- Use only len() and isdigit() or split()
- Decode the string by examining character by character with your functions
- Convert digits to correct integer values (for example: "432" to 432 after you decoded them digit by digit
- Organize your code with three other user-defined-functions to support the isValidString() function
- Utilize: Global variables, Boolean variables, Arithmetic operators, Assignment operators, Comparison operators, Logical operators, If-elif-else control statements, including nested ifs, While loops, Data typecasting, and string indexing

It is not about how fast or how less. It may not be the fastest way to code or the minimum amount of code, but it will allow you to practice program design and writing code with basic Python features. You will not be penalized if you choose the "all built-in string functions" route as long as your code passes all test cases, but you will need to prepare yourself for the final exam to solve problems using basic Python features. Take the time to have fun and take on the challenges.

Q. Can I have one function – the isValidString() function only?

Yes, that is the minimum requirement. Again, I encourage you to practice modulizing your code, calling user-defined-function within a user-defined function and passing values using parameters.

Q. What if I misspelled or did not use the function name isValidString() and the filename QCTestString.py?

Your code will fail all test cases – that means a score of zero – no exception will be made per syllabus and assignment instruction for pedagogy reasons.

Q: Is an empty batch like Q0p0d0 meant to be invalid?

Yes, “Q0p0d0” is invalid.

Q: What about "" as the value for s?

"“ is invalid.

Q: Do we need to consider anything more than two batches? Or are we only considering one-batch and two-batch strings?

There is no maximum number of batches. You should read the entire string and all the sets of cases you find.

Q: Is “Q3d1p2Q4d2p2Q5d1p4" valid?

"Q3d1p2Q4d2p2Q5d1p4" is valid.

Q: “Q3d1p2 “, there is a space after 2. Is this a correct batch?

No other characters are allowed. So “Q3d1p2 ” is not valid.

Q: Is a string still a valid input if the pass or defect cases are 0? For example, should Q10p0d10 be valid or invalid?

The p and d values might be zero. Therefore, p0 or d0 is valid.

Q: Is the number after Q must not be a 0?

Yes.

Q: Can we assume that there always will be a p or d character after the number of batches?

If the string is valid, there will be both a p and a d that follow the Q character. But that may not be the case if the string is not valid.

Q: Are the input strings limited to 1 digit? or can it be triple or more? ex: Q360d300p60?

"Q360d300p60" is valid.