Course: Introduction to Data Science (DS2006) - Laboratory 05

Task 1:
The purpose of the code shown in Figure 1 is to prompt the user 4 different choices, addition, subtraction, multiplication and division. Once the user has entered an input 2 more prompts are sent to get the first and second number to perform the calculations on. After all 3 inputs have been received, a match case is applied to the first prompt and then the relevant calculation is applied. The final case makes sure the user knows that their first choice was invalid.

Task 2:
When the program is run, no matter what userChoice is chosen, the default case always triggers. This is because the cases are matching for integers rather than strings, and since the userChoice input is converted to string the cases never match which results in the default case triggering. A solution to this is to either change the cases to their string equivalents such as "1" or "3", or to convert the userChoice input to integer by using int() instead of str(), the cases should match the correct input as long as the userChoice is one of the cases.

Another problem is the way the total is calculated. Because the first and second number inputs are not converted into integers, it will result in a TypeError when the program is run for the cases where the operation is not addition.The two numbers (e.g., "1" + "5") will be concatenated rather than added to each other (e.g., "15"). As for the other operations they do not concatenate and will lead to runtime errors. By converting the "firstNumber " and "secondNumber " input variables into integers before the match case, the error can be resolved and the calculations will compute correctly.

Two less serious problems are the logging logic and the name of the "total" variable. The "total" variable could be changed to "result" or something less specific to addition. As for the logging logic the "+" symbol in the string could be changed to either "and" so that it fits all the current cases and future cases as well.

Task 3 -5: better_calculator.py submitted

Task 6: jankenpo.py submitted

Task 7: myjankenpo.py submitted