**Lab 2: File I/O and error handling**

**Problem 1**: File Handling – Perform all the following operations using Python

1. Create a textfile named ‘TLP\_*YourName*.txt’ using Python and write some of the key concepts you have learned from TLP classes so far into the file.
2. Define a function that returns the number of lines and number of characters (including spaces) in the above file.
3. Define a function such that if the function in part (b) indicates that the file has less than 2 lines OR 50 characters, add additional writeup to the files until it exceeds both 2 lines and 50 characters.
4. Define a function that asks a user to input a word and checks whether the word exists in the file. The search should be case-insensitive. If the word exists, then the function should return a TRUE else FALSE.
5. Define a function that returns the longest and shortest word in the file.
6. Define a function that swaps every two adjacent words in the file. (e.g. I want to code -🡪 want I code to).

**Problem 2**: Exception Handling – Here are some well-known errors in Python that can be handled through the try and except statements:

1. ZeroDivisionError: This error occurs when you try to divide a number by 0.
2. FileNotFoundError: This error occurs when you try to open a file that does not exist.
3. KeyError: This error occurs when you try to access a key that does not exist in a dictionary.
4. IndexError: This error occurs when you try to access an index that is out of bounds for a list or string.
5. TypeError: This error occurs when you try to perform an operation on an object of an invalid type.
6. ValueError: This error occurs when you try to pass an invalid value to a function or operator.

Write some functions (of your choice) that can have one or many such errors and handle them accordingly using try and except.

***For example***: Write a function that takes an input of two integers, 'a' and 'b' and returns a/b. However, if the denominator is 0 or the user inputs a non-integer input, the program should use the appropriate exception to alert the user. Thus, this function should thus handle the two errors mentioned above.