Introduction to Computer Science (ICS 3U)
Files Problems

Instructions:

For each of the problems below, create a program and data files as required. Note that some of the programs or parts of programs are Level 4 programs and should only be done after all of the other programs are complete. Create a folder called **Files** to store your program and data files.

1. Write a program that will allow the user to input the number of words they wish to input into the computer. The program should then allow the user to enter the words and output to the data file called WORDS.TXT. Call the program **Files1.py**

2. Write a program that will input the words stored in the data file WORDS.TXT created in #1 and output them to the monitor. The program should finally output the number of words that are in the data file. Call the program **Files2.py**

3. Write a program that will allow the user to add any number of words to the end of the data file WORDS.TXT created in #1 using the keyboard. Call your program **Files3.py**

4. Write a program which will output all the numbers between 0 and 25 to a data file called NUMBERS.TXT. (Hint: Modify your **Repetitive4a.py** file). Call the program **Files4.py**

5. a) Create a data file called **SENTENCE.TXT** which will contain at least five sentences - one per line. You can create a data file by starting a new Python Idle window, type the required text and then saving the file.

   b) Write a program which will input a series of sentences from the data file SENTENCE.TXT created in (a). The computer should determine if the last character of each sentence is a correct punctuation character (i.e. a period, an exclamation mark or a question mark). If not, output a message for the user on the monitor. (**Hint**: Modify your **Functions3.py** program.) Call the program **Files5.py**

6. Create a program that will display a menu and allow the user to choose to do any or all of the following:
   - input a series of strings from the keyboard to be outputted into a <u>new</u> data file,
   - input a series of strings from the keyboard to be outputted into an <u>existing</u> file,
   - input a series of strings from a data file to be outputted to the monitor,
   - input a series of strings from one data file <u>and</u> output it to <u>another</u> data file.

   You should allow the user to input the name(s) of the data files they wish to use. Call the program **Files6.py**

   Notes:
   - Use void functions for each of the four tasks described above.
   - Ask the user for the name of the file and store this information in a variable. Use this variable when you open the data file.
   - Open **and** close the file in **each** of the void functions.
   - Make sure that you use a loop in every void function so the user can output any number of lines of information when outputting data to a file and can input all the data is inputted data from a file.

7. a) Create a data file for at least 5 students called STUDENT.TXT**.** The data should be in the following order: student's last name, student's first name, grade, mark 1, mark 2, mark 3, mark 4.

   b) Create a program that will input the following data from a file called STUDENT.TXT in the following order: student' last name, student's first name, grade, mark 1, mark 2, mark 3, mark 4. The program should then calculate the average of the four marks and output the student's full name, grade and average to the monitor **and** to a file called AVERAGE.TXT. Note that the number of students is constantly changing and therefore your program cannot use a counted loop (for...end for).Call the program **Files7.py**

8. a) Copy the data file called GOLF Basic.TXT from the student share folder to your folder.

   b) Create a program that will add up the golf scores of a number of golfers stored in the data file GOLF Basic.TXT. The file contains the names of the golfers and their score on each hole. The program should then output a list of the players and their total scores. The computer should also output the name of the winner of the tournament (the golfer with the lowest score) and the name of the most honest golfer (the golfer with the highest score). The output should be sent to the monitor only. Call the program **Files8.py**

   Level 4 Addition
   Copy the data file called GOLF.TXT from the student share folder to your folder. This folder has all the scores on a single line.

9. a) Copy the data file called ANSWERS.TXT from the assignment folder to your folder.

   b) Create a program which can be used to correct multiple choice tests. The program should input in the question numbers and correct answers stored in the ANSWERS.TXT data file. The program should input the student's answers and check to see if they are correct. The student's answers to each question are stored in files identified by their name (ie. PETER.TXT). Make up appropriate test files. The program should work for any number of students. The output should look like the work below:

Question Number	Correct Answer	Peter's Answer
1	a	c
2	c	c
3	e	a
4	a	c
5	b	b
6	d	d
7	b	b
8	c	e
9	a	a
10	c	a

Number Correct: 5

Call the program **Files9.py**

Level 4 Addition:
Have the output look like the table below:

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Question Number:     1 2 3 4 5 6 7 8 9 10      Number Correct
Answer:              a c e a b d b c a c
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Peter                c c a c b d b e a a           5
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