National University of Computer and Emerging Sciences, Lahore Campus

	Course:	AI Lab	**Course Code:**	AL2002
	Program:	BS (Data Science)	**Semester:**	Spring 2023
	Duration:	60 Minutes	**Total Marks:**	20
	Date:	16-March-24	**Weight:**	5 %
	Section:	6D	**Page(s):**	1
	Exam:	Quiz 1	**Reg. No.**	

Question 1:   10 marks

You are required to develop a Contacts Management System that utilizes various core Python concepts including data types, operators, conditionals, loops, functions, collections (lists, tuples, dictionaries, sets), exception handling, and file handling. The system should provide a console-based user interface for managing contact information.

Requirements:

You should first open notepad on your system and paste the following text in it and save it as contacts.txt**:**

John Doe,1234567890,johndoe@example.com

Jane Smith,2345678901,janesmith@example.com

Alex Johnson,3456789012,alexjohnson@example.com

Load Contacts:

Contacts should be loaded from a text file where each component of a contact is separated by a comma. As given above. Your code should handle file-related errors gracefully.

Add Contact: Prompt the user to enter a new contact's name, phone number, and email. Ensure no duplicate entries based on the name.

Search Contact: Allow users to search for a contact by name and display the corresponding details.

Delete Contact: Enable users to delete a contact by specifying the contact's name.

List Contacts: Display all saved contacts and their details, sorted by name.

Save Contacts: Contacts should be saved to the original file. The system should handle file-related errors gracefully.

Note:

You should create separate functions for each requirement and should provide the complete usage example of your contact management system at the end in a separate code block.
Upload your updated CSV file containing newly added contacts along with the ipynb file.

Question 2:   10 Marks

You are given four text files; your task is to compute the probabilities of each word from the corpus/data. The "data.txt" can have any type of text in it, we only want to compute the probability of the words that have English alphabets only.

Word	Count	Probability
hello	2	2/13
to	1	1/13
body	2	2/13
yours	1	1/13
sincerely	1	1/13
i	2	2/13
am	2	2/13
ali	1	1/13
no	1	1/13

Probability can be computed as:

$$\text{Probability (word)} = \frac{count(word)}{Total\ Words}$$

Sample **"data.txt":**

Hello to 3v3ry Body. Yours's sincerely. hello I am "Ali". I AM no body.

Total words: 13

Apply these three filters to the text.

1. Convert every word to lowercase.
2. Ignore the words with numeric character/s.
3. Remove special characters (e.g., ' , " " .) it means remove every character other than English alphabets.

To keep record of word and its count you are required to use an appropriate data structure that you have previously studied.

Implement a function **getWordsList** that receives text file name and returns a list of words after preprocessing the text file. Preprocessing means to filter the data according to the

abovementioned criteria. This function opens the file, reads the data, apply filters on data and store in a list.

Implement a function *printWord* which displays the **Word, count** and its **probability** as above table (top 100 words, having higher probabilities).

Work Flow:

1- Read the file, getWordsList(filename)

       Apply conditions

        i   Convert text to lowercase (use text.**lowercase() function**)

        i   Split the text into words (use text.**split(separater) function**)

        i   Remove words having numeric character/s

        iv   Remove stop words (use **set operation**)

Failing to follow any instruction will deduct marks even if the code is working. Any kind of plagiarism will result of 0 marks in all quizzes.