SOF103 C and C++ Programming
Lab Exercise 6
Input, Output & Files

1. A company needs to keep record of the customers and their credit balances. Write a program to obtain an account number, the customer's name and the customer's balance (the amount the customer still owes the company for goods received). Save the record in a file named "customer.txt".

    ```
    Enter the account number, customer's name and balance.
    Enter EOF to end input.
    ? 10 Jack 110
    ? 11 Michael 250
    ? 12 Lee 300
    ? 13 Ken 0
    ? 14 Jane 10
    ? ^Z
    ```

2. Write a program to read data from the file "customer.txt" you have written in question 1 above and display the data on screen.

3. A file named "student.txt" contains student marks for an examination. The file content is shown below.

    ```
    85 90 78 77 87 98 79 74 80 71 80 76 89 79 85 73 70 89 76 85
    ```

    Write a program to read the contents of the file and calculate the average marks, the highest marks and the lowest marks. Save the statistics in a file named "studentstatistics.txt".

4. Write a program that produces a bar chart showing the population growth of Prairieville, a small town in the Midwest, at 20 year intervals during the past 100 years. The program should read in the population figures (rounded to the nearest 1000 people) for 1910, 1930, 1950, 1970, 1990, and 2010 from a file. For each year it should display the date and a bar consisting of one asterisk for each 1000 people. The data can be found in the People.txt file.

    Here is an example of how the chart might begin:
    PRAIRIEVILLE POPULATION GROWTH
    (each * represents 1000 people)
    1910 **
    1930 ****
    1950 *****

5. A teacher asked all her students to line up according to their first name. For example, Amy will be at the front and Yolanda at the end. Write a program that prompts the user to enter the number of students in the class, then loops to read in that many names. Once all the names have been read, it reports which student would be at the front of the line and which one would be at the end. Assume that no two students have the same name.

Input Validation: Do not accept a number less than 1 of greater than 10 for the number of students. The names should be valid consisting of alphabets only.

6.   Modify Question 5 so that it gets the names from a data file. Names should be read in until there is no more data to read. Data to test your program can be found in the LineUp.txt file or you can create a testing file yourself.