INTRODUCTION

Throughout your career in software design and development, you will be asked to create applications with various features and criteria based on a variety of business requirements. For this assessment, you will create your own C# application with requirements that mirror those you will encounter in a real-world job assignment.

The skills you will showcase in this assessment are also directly relevant to technical interview questions for future employment. This application should become a portfolio piece for you to show to future employers.

Several attachments and links have been included to help you complete this task. The attached “Database ERD” shows the entity relationship diagram (ERD) for this database, which you can reference as you create your application.

For this task, you will use the Performance Assessment Lab Area accessed by the Performance Assessment Lab Area link to access the virtual lab environment to complete this task. The preferred integrated development environment (IDE) for this assignment is Visual Studio. If you choose to use another IDE, you must export your project into Visual Studio format for submission.

Your submission should include a zip file with all the necessary code files to compile, support, and run your application. The zip file submission must also keep the project file and folder structure intact for the Visual Studio IDE.

SCENARIO

You are working for a software company that has been contracted to develop a scheduling desktop user interface application. The contract is with a global consulting organization that conducts business in multiple languages and has main offices in Phoenix, Arizona; New York, New York; and London, England. The consulting organization has provided a MySQL database that your application must pull data from. The database is used for other systems and therefore its structure cannot be modified.

The organization outlined specific business requirements that must be included as part of the application. From these requirements, a system analyst at your company created solution statements for you to implement in developing the application. These statements are listed in the requirements section.

REQUIREMENTS

A.   Create a log-in form that can determine the user’s location and translate log-in and error control messages (e.g., “The username and password did not match.”) into the user’s language and in **one** additional language.

B.  Provide the ability to add, update, and delete customer records in the database, including name, address, and phone number.

C.   Provide the ability to add, update, and delete appointments, capturing the type of appointment and a link to the specific customer record in the database.

D.   Provide the ability to view the calendar by month and by week.

E.   Provide the ability to automatically adjust appointment times based on user time zones and daylight-saving time.

F.   Write exception controls to prevent each of the following. You may use the same mechanism of exception control more than once, but you must incorporate at least two different mechanisms of exception control.

•   scheduling an appointment outside business hours

•   scheduling overlapping appointments

•   entering nonexistent or invalid customer data

•   entering an incorrect username and password

G.  Write **two** or more lambda expressions to make your program more efficient, justifying the use of each lambda expression with an in-line comment.

H.  Write code to provide reminders and alerts 15 minutes in advance of an appointment, based on the user’s log-in.

I.   Provide the ability to generate each of the following reports using the collection classes:

•   number of appointment types by month

•   the schedule for each consultant

•   one additional report of your choice

J.   Provide the ability to track user activity by recording timestamps for user log-ins in a .txt file. Each new record should be appended to the log file if the file already exists.

K.   Demonstrate professional communication in the content and presentation of your submission.