**PROG6221 - Tutorial Questions**

1. Write a C# console application that prompts the user to enter their name and age. Validate the input and store them in variables using implicit variable declaration (var).
2. Develop a C# program that calculates the average grade for a set of students. Create a collection of grades (e.g., array, list) and use implicit variable declaration (var) for iteration and calculation.
3. Instructions: Write a C# program to generate the Fibonacci sequence up to a specified number of terms. Store the sequence in a collection and utilize implicit variable declaration (var) where appropriate.
4. Create a C# program that takes a string input from the user, performs string manipulation operations (e.g., reversing, converting case), and displays the result. Use implicit variable declaration (var) for string variables.
5. Develop a C# program that sorts a list of numbers in ascending order. Utilize implicit variable declaration (var) when declaring variables to store sorted results or during sorting algorithm implementations.
6. You have a list of student objects, each containing a student's name and their grades in different subjects. Write a C# program using LINQ that calculates the average grade for each student and identifies students who have an average grade above a certain threshold (e.g., 80%). Ensure your program demonstrates the use of LINQ methods for filtering, projection, and aggregation.
7. Imagine you have a collection of product objects, each representing an item in your inventory. Write a C# program using LINQ that filters the product inventory based on specific criteria such as price range, category, or availability. Ensure your program demonstrates the use of LINQ methods for filtering and sorting data effectively.
8. You are provided with a dataset containing sales records for different products over a period of time. Write a C# program using LINQ that analyzes the sales data to identify top-selling products, calculate total revenue, and find trends in sales over time (e.g., monthly or quarterly). Ensure your program demonstrates the use of LINQ methods for grouping, aggregation, and ordering data.