

Programming Exercise Questions on Method in C#

1. **Create a method** to calculate the area of a rectangle, taking the length and width as parameters.
2. **Write a method** to check if a number is prime, taking the number as a parameter.
3. **Implement a method** to reverse a string, taking the string as a parameter.
4. **Design a method** to find the factorial of a given number, taking the number as a parameter.
5. **Develop a method** to calculate the sum of digits in a number, taking the number as a parameter.

Method Overloading

1. **Create overloaded methods** to calculate the area of different shapes (e.g., circle, square, triangle).
2. **Write overloaded methods** to print a message with different numbers of parameters.

Recursion

1. **Implement a recursive method** to calculate the Fibonacci sequence.

Parameter Passing

1. **Demonstrate the difference** between pass-by-value and pass-by-reference using examples.
2. **Create a method** that modifies an array passed as a parameter.
3. **Write a method** that takes a variable number of arguments using the `params` keyword.

Practical Applications

1. **Develop a method** to calculate the average of a list of numbers.
2. **Implement a method** to validate an email address.
3. **Design a method** to check if a string is a palindrome.
4. **Create a method** to convert a temperature from Celsius to Fahrenheit.
5. **Write a method** to find the maximum element in an array.

Advanced Exercises

1. **Design a method** to perform binary search on a sorted array.