# Object Oriented Programming

## Problems Definition – Extension-Methods-Delegates-Lambda-LINQ

1. **Implement an extension method Substring(int index, int length) for the class StringBuilder that returns new StringBuilder and has the same functionality as Substring in the class String.**
2. **Implement a set of extension methods for IEnumerable<T> that implement the following group functions: sum, product, min, max, average.**
3. **Write a method that from a given array of students finds all students whose first name is before its last name alphabetically. Use LINQ query operators.**
4. **Write a LINQ query that finds the first name and last name of all students with age between 18 and 24.**
5. **Using the extension methods OrderBy() and ThenBy() with lambda expressions sort the students by first name and last name in descending order. Rewrite the same with LINQ.**
6. **Write a program that prints from given array of integers all numbers that are divisible by 7 and 3. Use the built-in extension methods and lambda expressions. Rewrite the same with LINQ.**
7. **Using delegates write a class Timer that has can execute certain method at each t seconds.**
8. **\* Read in MSDN about the keyword event in C# and** [**how to publish events**](http://msdn.microsoft.com/en-us/library/w369ty8x.aspx)**. Re-implement the above using .NET events and following the best practices.**