



SL-3001 Software Construction and Development Home Work-01

Objectives:

- String matching.
- Regex
- Regular Expression

Deadline: 10-Sep-2022

Note: Carefully read the following instructions (*Each instruction contains a weightage*)

1. There must be a block of comments at start of every question's code by students; the block should contain brief description about functionality of code.
2. Comment on every function and about its functionality.
3. Mention comments where necessary such as comments with variables, loop, classes etc to increase code understandability.
4. Use understandable name of variables.
5. Proper indentation of code is essential.
6. Write a code in C# language.
7. First think about statement problems and then write/draw your logic on copy.
8. After copy pencil work, code the problem statement on MS Studio C# compiler.
9. At the end when you done your tasks, attached C# created files in MS word file and make your submission on Google Classroom. (Make sure your submission is completed).
10. Please submit your file in this format **19F1234_L4**.

Submission:

11. **Make a Microsoft Word file and paste all of your C# code with all possible screenshots of every task output in Microsoft Word and submit word file. submit all .cpp file.**
12. **There will an viva of it after due date.**

13. Do not submit your assignment after deadline. Late and email submission is not accepted.

14. Do not copy code from any source otherwise you will be penalized with **Zero (0)** marks.

Note: Resource to solve below problems (You can also see other resources as well).

1. <https://www.geeksforgeeks.org/what-is-regular-expression-in-c-sharp/>
2. <https://www.c-sharpcorner.com/article/c-sharp-regex-examples/#:~:text=Regular%20Expressions%20in%20C%23,characters%2C%20operators%2C%20or%20constructs.>



Problem: 1 | Console App [1 weightage]

You are hired to work on input validation of an application.

- a. **Your 1st task is to write a C# code for password validation. A valid password must satisfy following conditions:**
 1. Length of password should be more than 5 and less than 11
 2. Password must contain at least 1 digit, 1 uppercase Letter and 1 special character
- b. **Your 2nd task is to write a C# code for email validation. A valid email must satisfy following conditions:**
 1. Email must have the given format “prefix@domain.com”.
 2. Domain must be a valid domain (must match with any domain in domain dataset).
 3. 1st char of prefix must be an alphabet
 4. prefix can have only 3 special characters (-, ., _)
 5. 2 consecutive special characters in prefix are not allowed
 6. Last character of a prefix can not be a special character

Problem: 2 | Console App [1 weightage]

IP addresses are made up of four bytes (each with a valid range of 0-255). IP addresses are usually formatted as four sets of digits (each is one to three digits in length) separated by . characters.

Write a C# code that reads a sentence and returns IP addresses

Input:

Ahmads ID is 465 and his IP address is 127.0.0.1 but bashirs IP address is 123.456.0.3

Output

127.0.0.1



Problem: 3 | Console App

[2 weightages]

United Kingdom postcodes are five, six, or seven characters and digits defined by the Royal Mail. Postcodes are made up of two parts: the outward postcode (or *outcode*) and the inward postcode (or *incode*). The outcode is one or two alphabetic characters followed by one or two digits, or one or two characters followed by a digit and a character. The incode is always a single digit followed by two characters (any characters excluding C, I, K, M, O, and V, which are never used in postcodes). The incode and outcode are separated by a space.

Write a C# code that reads a sentence and returns postcode

Input:

- 171 Kyverdale Road, London N16 6PS
- 33 Main Street, Portsmouth, P01 3AX
- 18 High Street, London NW11 8AB

Output:

N16 6PS

P01 3AX

NW11 8AB



Best of luck