

Data Structures & Algorithms III– SCS 2201

String Matching Assignment

Deadline: on or before 7th August 2023 (11.55 pm)

In this assignment, you are required to develop a program that utilizes regular expressions to search for patterns with special characters or repetitions in a given text. Regular expressions are a powerful tool for pattern matching in strings and can handle complex patterns efficiently. Your algorithm should find all positions where the *pattern* is found.

How to Deliver

- Your solution should contain
 - Compilable (and afterwards runnable) source file(s) of your implementation.
 - *Readme* file containing details of how your solution can be run: preparing the environment to run your program, location of makefiles, etc.
 - You should convince the examiner, best in a concise and clear manner, that your solution does the job. That should be based on two things:
 - **An explanation:** justifying the selection of the string-matching algorithm in a separate file. However, a lengthy discussion of the principles of the selected string-matching algorithm is not needed. Concentrate on your solution and highlight the special points of the code. Salient comments in the source code may also help. However, a general explanation should be in the file, not part of the comments.
 - **Test-data:** Convince the examiner by preparing some test runs. Provide instructions as to how to execute the tests. As a suggestion: make a small number of tests. Therefore, provide **n** pairs of *Pattern* and *Text*, for instance pattern1.txt, text1.txt, pattern2.txt, text2.txt etc. and produce files patternmatch1.output, patternmatch2.output. Make meaningful test cases.
 - **Your solution should work for a random text and a pattern given by the examiners.**
- You should upload a Zip file with your solution. It is important that you use your index number to name the zip file.

Plagiarism

All programming work must be your own. All forms of plagiarism and cheating (for example downloading programs directly from the internet or copying from another student) are regarded seriously and could result in heavy penalties including failure in the assignment. Under certain circumstances some students may be called for a viva.