Compiler Laboratory

- **Assignment 02:**

  You will be designing a language and building a compiler for it in this course. This task will be broken down into a series of assignments.

  The language you design must have the following features

  - Global declarations for both functions and variables
  - Usual mathematical expressions (bracketing, +, -, *, /, unary negation)
  - Have Integers and Boolean types
  - Looping options
  - Conditionals
  - Should allow all kinds of nesting.
  - Type checking.
  - Input/Output commands
  - Recursion.

- **Part 1**

  Write a C program to do the following:
  Input: A regular expression on the alphabet {a,b...}.
  Output: The minimal DFA for the regular expression

  In addition, you must write a program to simulate the DFA on any possible input.

- **Part 2**

  Write the grammar(tentative) for the language you've designed. The language you've designed should be presented at a .txt or .pdf file. Identify the tokens. Write a lex code which will produce the tokens for your language.