FORMAL LANGUAGES AND AUTOMATA THEORY
PROJECT ASSIGNMENT

REG#: _____   NAME#: _____

COURSE CODE: CS224   INSTRUCTOR: MUHAMMAD SAJID ALI

TOTAL MARKS: 100

Instructions

Please make groups of exactly three students each. You are strongly advised to make balanced groups, with an objective to facilitate/provide peer-help to students with relatively weaker programming skills. Class Representative (CR) is kindly requested to make a group-members list on a single paper and make it convenient to submit the consolidated list before the next lecture.

Build Lexical Analyzer

In class we have thoroughly studied Regular Expressions (R.E) to generate different languages. It's time to put the studied concepts into action and get something useful out of it.

In this project assignment you will build Lexical Analyzer (LA) of basic compiler front-end. This means that your compiler should be able to read an input from source file and generate required tokens. For this task of the frontend, you will use *flex* to create a Lexical Analyzer for the C++ Language. Figure out all the tokens your language allows and write them out in a Lex file. Submit the Lex file along with example source files. Make sure examples cover most of the tokens supported by C++ language. Your LA will identify all tokens from a source input file and store them in an output file including, token_id, token and line number.

Introduction to FLEX

Flex is a free and open-source software alternative to lex. It is a computer program that generates lexical analyzers. It is frequently used as the lex implementation together with Berkeley Yacc parser generator on BSD-derived operating systems, or together with GNU bison in *BSD ports and in Linux distributions. For more details and tutorials please visit this website.

Project Report:

Add the following details to your project report.
1. Group Members
2. Your Lexical Analyzer Name
3. Lexical Analyzer code
4. Sample Examples and Outputs for Lexical Analyzer

Grading:

1. Group Members
2. Lexical Analyzer (55%)
3. Project Report (30%)
4. Viva (15%)