Indian Institute of Technology Roorkee

Department of Computer Science and Engineering

CSN-362: Compiler Laboratory (Spring 2024-2025)

Lab Assignment-6 (L6) **Date: 25 Feb 2025** **Duration: 3 hrs**

Problem Statement 1:
Write a C/C++ program that reads a file named "text.txt" to read grammar. Epsilon is represented by the symbol "^". The program considers LALR to be the input grammar and constructs the LALR bottom-up parsing table and then create the parse tree from it for an input string. Hence, simulate LALR bottom-up parsing algorithm.

Submission folder P1 should contains:

1. Source code file
2. Text.txt files for different grammars.
3. Snapshot image files showing the outputs on the console after running the code.

Sample text.txt file:
E-> E+T|T
T-> T*F|F
F-> (E)|id

Two levels of output:
1. LALR Parsing Table
2. LALR parse tree

Problem Statement 2:
Write a C/C++ program that reads a file named "text.txt" to read grammar. Epsilon is represented by the symbol "^". The program considers SLR(1) to be the input grammar, identify LR(0) items and constructs the SLR(1) parsing table. Then create the parse tree from it for an input string. Hence, simulate SLR(1) parsing algorithm.

Submission folder P2 should contains:

1. Source code file
2. Text.txt files for different grammars.
3. Snapshot image files showing the outputs on the console after running the code.

Sample text.txt file:
E-> E+T|T
T-> T*F|F
F-> (E)|id

Two levels of output:
1. LR(0) set of items
2. SLR(1) Parsing Table
3. SLR(1) parse tree