MODEL ENGINEERING COLLEGE, THRIKKAKARA

CS 431 COMPILER DESIGN LAB

List of Exercises/Experiments :

Cycle I (3 slots)

1. Design and implement a lexical analyzer for given language using C language and the lexical analyzer should ignore redundant spaces, tabs and new lines.
2. Implementation of Lexical Analyzer using Lex Tool
3. Generate YACC specification for a few syntactic categories. (any one)
   a) Program to recognize a valid arithmetic expression that uses operator +, −, * and /.
   b) Program to recognize a valid variable which starts with a letter followed by any number of letters or digits.
   c) Implementation of Calculator using LEX and YACC
   d) Convert the BNF rules into YACC form and write code to generate abstract syntax tree

Cycle II (2 slots)

4. Write program to find ε – closure of all states of any given NFA with ε transition.
5. Write program to convert NFA with ε transition to NFA without ε transition.
6. Write program to convert NFA to DFA
7. Write program to minimize any given DFA.

Cycle III (2 slots)

8. Develop an operator precedence parser for a given language.
9. Write program to simulate FIRST and FOLLOW of any given grammar.
10. Construct a recursive descent parser for an expression.
11. Construct a Shift Reduce Parser for a given language.

Cycle IV (2 slots)

12. Write a program to perform loop unrolling.
13. Write a program to perform constant propagation.
14. Implement Intermediate code generation for simple expressions.

Cycle V (1 slot)

15. Implement the back end of the compiler which takes the three address code and produces the 8086 assembly language instructions that can be assembled and run using an 8086 assembler. The target assembly instructions can be simple move, add, sub, jump etc.

Slot	Date	Cycle	Evaluation	Date of Completion
1	05/08/2019 08/08/2019	Cycle I	CE	26/08/2019 29/08/2019
2	19/08/2019 22/08/2019		CE	
3	26/08/2019 29/08/2019		CE/VIVA	
4	02/09/2019 05/09/2019	Cycle II	CE	16/09/2019 19/09/2019
5	16/09/2019 19/09/2019		CE/VIVA	
6	23/09/2019 26/09/2019	Cycle III	CE	30/09/2019 03/10/2019
7	30/09/2019 03/10/2019		CE/VIVA	
8	10/10/2019 14/10/2019	Cycle IV	CE	17/10/2019 20/10/2019
9	17/10/2019 20/10/2019		CE/VIVA	
10	24/10/2019 27/10/2019	Cycle V	CE/VIVA	24/10/2019 27/10/2019