

MODEL ENGINEERING COLLEGE, THRIKKAKARA

CS 411 COMPILER DESIGN LAB

Lab Schedule:

Introduction:13/16-09-2022

Cycle I (submit by 4/7-10-22)

1. Write program to design and implement a lexical analyzer using C language to recognize all valid tokens in the input program. The lexical analyzer should ignore redundant spaces, tabs and newlines. It should also ignore comments.
2. Write program to implement a Lexical Analyzer for a given program using Lex Tool.
3. Write a lex program to display the number of lines, words and characters in an input text.
4. Write a LEX Program to convert the substring abc to ABC from the given input string.

Cycle II (submit by 25/28-10-22)

5. Generate a YACC specification to recognize a valid arithmetic expression that uses operators +, −, *, / and parenthesis. COMPUTER SCIENCE AND ENGINEERING
6. Generate a YACC specification to recognize a valid identifier which starts with a letter followed by any number of letters or digits.
7. Implementation of Calculator using LEX and YACC
8. Convert the BNF rules into YACC form and write code to generate abstract syntax tree.

9. Write a program to find ϵ – closure of all states of any given NFA with ϵ transition.

Cycle III (Submit by 25/28-11-22)

10. Write a program to convert NFA with ϵ transition to NFA without ϵ transition

11. Write a program to convert NFA to DFA.

12. Write a program to minimize any given DFA.

13. Write a program to find First and Follow of any given grammar.

14. Design and implement a recursive descent parser for a given grammar.

15. Construct a Shift Reduce Parser for a given language.

Cycle IV (submit by 12/16-12-22)

16. Write a program to perform constant propagation.

17. Implement Intermediate code generation for simple expressions.

18. 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.