SYSTEM SOFTWARE LABORATORY

PART-A

Implement the following using C/C++ for the SIC Machine:

1. Develop pass-1 of two-pass assembler.
2. Develop pass-2 of two-pass assembler.
3. Develop absolute loader.
4. Develop relocating loader using bit mask.
5. Develop one-pass macroprocessor.

PART-B

LEX Exercises:

1. Develop a lex program to count the number of characters, words, spaces and lines in a given input file.
2. Develop a lex program to count the number of comment lines in a given C program.
3. Develop a lex program to recognize a valid arithmetic expression and identify the identifiers and operators present.
4. Develop a lex Program to recognize and count the number of identifiers in a given input file.

PART-C

YACC Exercises:

1. Develop a yacc program to recognize a valid arithmetic expression that uses operators + ,- ,* and /.
2. Develop a yacc program to recognize a valid variable, which starts with a letter, followed by any number of letters or digits.
3. Develop a yacc program to evaluate an arithmetic expression involving operators +,-,* and /.
4. Develop a yacc program to recognize the strings of the form $a^m b^n$, where m>=0,n>=0.