Department of Computer Science and Engineering
National Institute of technology, Silchar

Course Profile

Semester/branch: 5th Sem. CSE

Course Title: **COMPILER DESIGN LAB.**	*L*	*T*	*P*	*C*
Course code: CS 1315	*0*	*0*	*2*	*2*
Prerequisites: Nil				
Course Coordinator: Thoudam Doren Singh				

Course Overview:
This Laboratory Course will enable the students to implement the basic concepts compiler design using tools like Lex and Yacc.

Course Outcomes:
After completing this course the students should be able to:

a) Gain knowledge about the Lex and Yacc.
b) Implement the basic concepts of compiler design using Lex and Yacc.

List of experiments

1. Write an introduction on 'lex'.
2. Write a lex program to recognize an alphabet.
3. Write a lex program to identify keywords, symbols and operators.
4. Write a lex program, which takes a C program as input, and display the list of identifiers and operators.
5. Write a lex program to count the number of vowels and consonants in a given sentence.
6. Write a lex program to count the number of lines, words, special characters and letters in a program.
7. Write a lex program to count the number of comments in a C program, and then delete the comments.
8. Program a lex program to count the number of keywords, operators, identifiers, comments, and then delete the comments.
9. Write a yacc program to evaluate an arithmetic expression involving $+$, $-$, $\times$, $\div$.
10. Write a yacc program to recognize nested "IF" control statements, and display the number of level of nesting.
11. Write a yacc program to recognize a valid variable, which starts with a letter followed by any number of digit and letter.
12. Write a yacc program to recognize strings "aaab", "abbb", "ab" and "a" using the grammar $a^n b^n$, where $n>0$.

Reference books:

1. John Levine, Tony Mason & Doug Brown, "Lex and Yacc", O'Reilly.1995
2. Alfred V. Aho, R. Sethi and J.D. Ullman "Compilers: principles, techniques and tools" Addison-Wesley.
3.

CO-PO mapping for the CS 1315:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	□	□	□	□	□							
CO2	□	□	□	□	□							

Evaluation Scheme:

Assessment	**Weightage (%)**
Attendance	5
Lab-Copy	20
Lab. Exam	50
Viva	25
Total	100