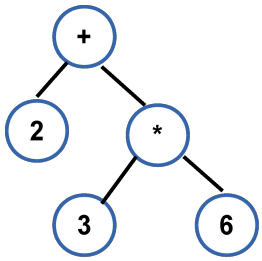
SSN COLLEGE OF ENGINEERING, KALAVAKKAM

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

Compiler Design Lab – CS6612

PROGRAMMING ASSIGNMENT 5 – Implementation of abstract syntax tree generation for arithmetic expression using syntax directed translation in Yacc

Abstract Syntax Tree (AST) is a parse tree that includes only the terminal symbols. The objective of this assignment is to generate AST using Yacc tool. The AST for the expression 2+3*6 is as follows



In order to implement this, write a Lex program to recognize the tokens namely, digit and identifier. Write Syntax Directed Translation (SDT) for the generation of AST in Yacc by considering the grammar below:

G: E → E+T
E → T
T → T*F
T → F
F → id | number

Note:

The SDT includes semantic rules corresponding to each production that involves the creation of nodes for the terminal symbols. Write necessary functions to create the nodes dynamically.

Test Cases:

Test your code with the following test cases

15+9*67
4*5*8
a+b*8
34*b+76
c+d+g