School of CET

System Software and Compiler Design

BTech CSE

Assignment No.6

Title: Implementing recursive descent parser for arithmetic Construct (Statement).

Aim: Implement Recursive Descent parser for given grammar.

$E \rightarrow E + T \mid T$

$T \rightarrow T * F \mid F$

$F \rightarrow (E) \mid id$

Objective:

1. To study parsing phase in the compiler.
2. To study types of parsers – top down and bottom up.
3. Problems encountered during top down parser.
4. How to write a top down parser.

Theory: Write in brief for following:

1. CFG, non-terminals, terminals, productions, derivation sequence.

2. Introduction to Recursive Descent Parser.

3. Elimination of Left recursion.

4. Give Example:

This left-recursive grammar:

$E \rightarrow E + T \mid T$

$T \rightarrow T * F \mid F$

$F \rightarrow (E) \mid id$

Eliminate the immediate left recursion.

Input: String satisfying given grammar, string not satisfying given grammar to test error condition.

Output: Success for correct string, Failure for syntactically wrong string.

Conclusion: The recursive descent parser is successfully implemented.

Platform: Linux (C/C++/JAVA)