Rajiv Gandhi Institute of Petroleum Technology, Jais Amethi

Department of Computer Science and Engineering

Compiler Design Lab (CS312L)

Assignment 3

1. Design and implement a lexical analyzer that identifies keywords, identifiers, operators, and delimiters from a given source program.

   Problem Statement:

   Write a program to read a C-like source code file and classify the following tokens:

   - Keywords: int, float, if, else, while, return

   - Identifiers

   - Arithmetic operators: +, -, *, /

   - Relational operators: <, >, ==

   - Delimiters: ; , ( ) { }

2. Extend lexical analysis by adding line number tracking and symbol table generation.

   Write a lexical analyzer that tokenizes the input program, displays each token with its type and line number, and generates a symbol table for identifiers.

3. Write a lexical analyzer that tokenizes the input program, displays each token with its type and line number, and generates a symbol table for identifiers.

Objective:

Implement a lexical analyzer using regular expressions to recognize complex tokens.

Write a program to perform lexical analysis using regular expressions to identify:

- Identifiers

- Integers and floating-point numbers

- Single-line and multi-line comments

- String literals