CD Lab
Project Report

2023-24

Name of the students:

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Branch: - Computer Science and Engineering **Semester:-** 6th
Batch:- B2

Name of the course: Compiler Design Lab

Course Code: CSP 353

Title of Project: - Syntax Analyzer for DummyC

Course Coordinator: -. 1)Prof. Subhangi Tripide

Associate Professor

2)Prof. Vrushali Bongirwar
Associate Professor

Summary:

The project employs Lex and Yacc (or flex and bison) to create a lexer and parser for a simplified version of the C programming language. The Lex file defines acceptable tokens and their

corresponding actions, while the Yacc file establishes the grammar rules for parsing C declarations.

The Lex file consists of three main sections: function definitions, token definitions, and user-defined functions. Tokens are compared against a predefined list, with corresponding actions executed upon matching. Additionally, error handling functions are implemented to manage invalid tokens or sequences.

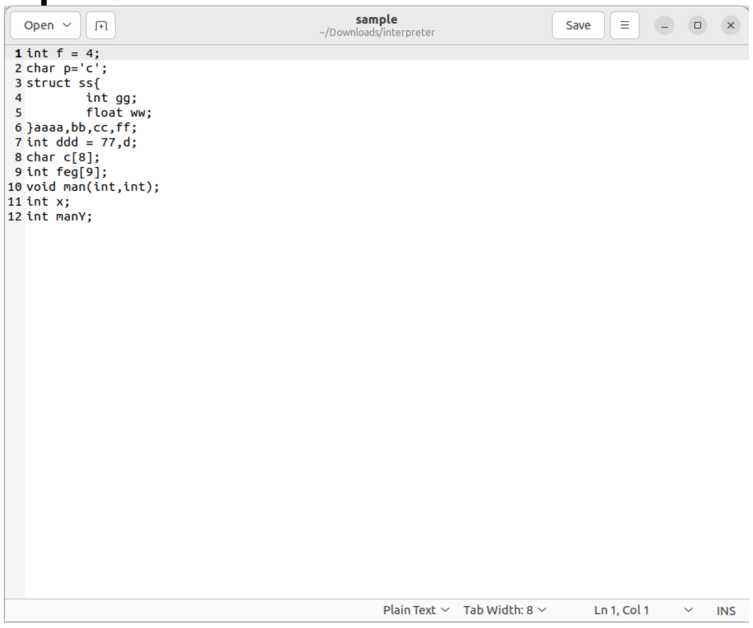
In the Yacc file, the grammar for C declaration statements is defined, with "Declaration" as the root symbol. Error messages and datatype definitions are also included. The main function initiates parsing using yyparse(), ensuring that the program terminates only if no errors are found.

The project includes header files for additional functionalities like datatype storage and validation. Additionally, it provides instructions for generating output without a graphical user interface (GUI) using terminal commands.

For the Java GUI component, the project comprises three classes: SSMain, MyFrame, and Listener. MyFrame extends JFrame to create the window frame and UI components, while Listener handles mouse events for file selection and execution. The GUI allows users to choose a sample file, execute the parser, and view error messages.

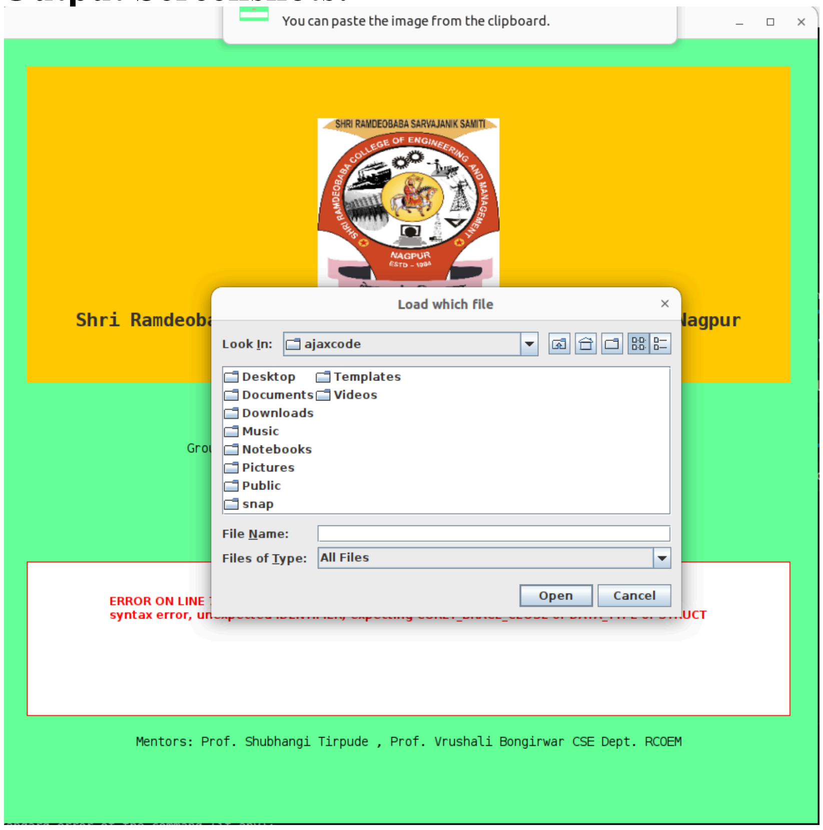
Overall, the project offers a comprehensive solution for parsing C declaration statements using Lex and Yacc, with a Java GUI for user interaction, providing an alternative to traditional IDEs for C development.

Input Screenshots:



```
int f = 4;
char p='c';
struct ss{
        int gg;
        float ww;
}aaaa,bb,cc,ff;
int ddd = 77,d;
char c[8];
int feg[9];
void man(int,int);
int x;
int manY;
```

Output Screenshots:


You can paste the image from the clipboard.

Shri Ramdeob... Nagpur

Load which file

Look In: ajaxcode

Desktop
Templates
Documents
Videos
Downloads
Music
Notebooks
Pictures
Public
snap

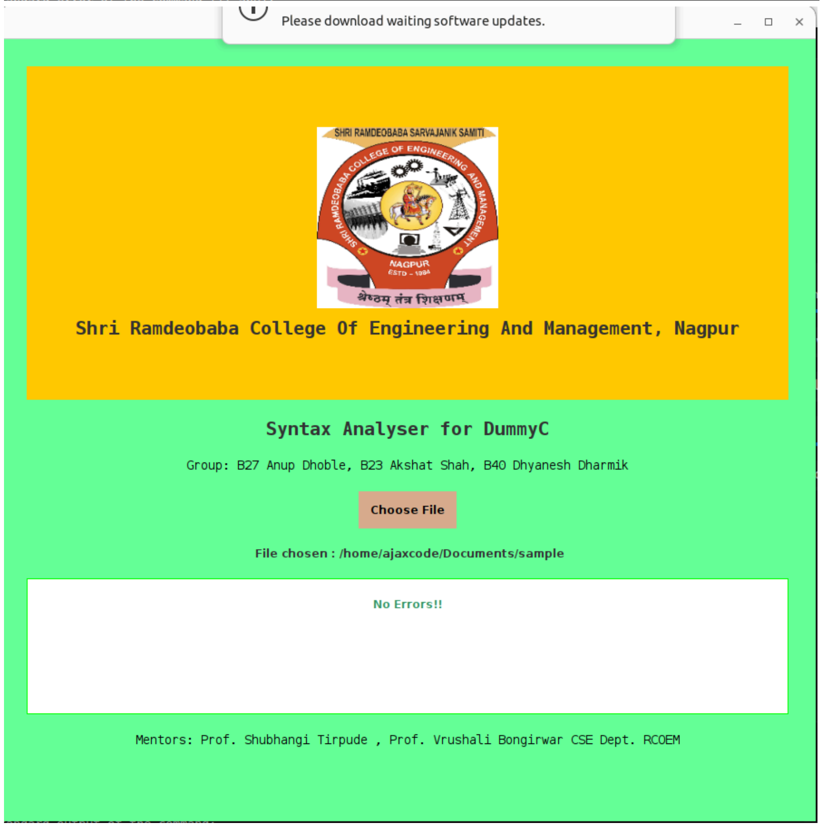
File Name:

Files of Type: All Files

ERROR ON LINE

syntax error, un... UCT

Mentors: Prof. Shubhangi Tirpude , Prof. Vrushali Bongirwar CSE Dept. RCOEM


Please download waiting software updates.

Shri Ramdeobaba College Of Engineering And Management, Nagpur

Syntax Analyser for DummyC

Group: B27 Anup Dhoble, B23 Akshat Shah, B40 Dhyanesh Dharmik

File chosen : /home/ajaxcode/Documents/sample

No Errors!!

Mentors: Prof. Shubhangi Tirpude , Prof. Vrushali Bongirwar CSE Dept. RCOEM

Conclusion:

The project effectively utilizes Lex and Yacc to create a lexer and parser for a simplified C programming language subset. It demonstrates the importance and capabilities of lexical analysis and parsing in language processing and compiler construction.

Project Outcome and Usability:

The project delivers a user-friendly solution for parsing C declaration statements, offering both command-line execution and a Java GUI. Its ease of use, robust error handling, flexibility, performance, and educational value make it a valuable tool for parsing C code and learning language processing concepts.