

Compiler Design Lab CO351

Project Abstract

Submitted By:

Namrata Ladda, 16CO121

Mehnaz Yunus, 16CO124

Sharanya Kamath, 16CO140

Submitted To:

Prof. P. Santhi Thilagam

CSE Dept, NITK

Date:

January 10, 2019

FEATURES

The project objective is to construct a compiler that studies the C programming language. It will have the following features:

- The compiler is going to support the following cases:
 - Keywords : eg: `int`, `char`, `float`
 - Identifiers : eg: `maximum`, `avg`
 - Constants : eg. `1`, `2`, `20`
 - Operators: eg: `+`, `-`, `*`
 - Strings: eg: `"nitk"`, `"mehnaz"`, `"red"`
 - Special symbols: eg: `[]`, `*`, `()`
- Support `int` and `char` data types and also `short`, `long`, `signed`, `unsigned` subtypes.
- Detection of arrays with specified datatype (eg: `int arr[10]`)
- Detection of looping constructs such as `while` and nested `while` as well as `for` and nested `for`.
- Detection conditional statements such as `if-else` and nested `if-else`.
- Identification of user-defined functions with one argument with return types `int`, `char`, `void`.
- Hashing techniques used to maintain symbol and constant tables.
- Support for single line as well as multiline comments and return appropriate error messages.
- Appropriate error messages for comments and strings that don't end until the end of the file.

RESULTS

- Details of the identified tokens for the source program taken as input.
- Symbol and constants table
- Errors in the source program along with appropriate error messages
- Symbol and constants table will be designed using hashing organization techniques.

TOOLS USED

- Flex
- YACC