

Compiler design lab assignment.

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CSE-I

REPORT:

Symbol Table is an important data structure created and maintained by the compiler. It is used by various phases of the compiler.

- 1) Lexical analysis
- 2) Syntax analysis
- 3) Semantic analysis
- 4) Intermediate code generation
- 5) Code optimization
- 6) Target code generation

Implementation of symbol table is done by 3 ways:

- 1) Linked list
- 2) Hash table
- 3) Binary search tree

Symbol table is used by both the analysis and the synthesis parts of a compiler.

It maintains an entry for each name.

Variable names and constants

Procedure and function names

Literal constants and strings

Compiler generated temporaries

Labels in source languages

The screenshot shows a web browser window with the URL `onlinegdb.com/online_c_compiler`. The interface includes a toolbar with buttons for Run, Debug, Stop, Share, Save, and Beautify. The main area displays a C program in `main.c` that reads an expression from the user and prints it. Below the code editor, the 'Input' section shows the user's input: `Enter Expression (terminated by $): ab+bc+ac=abc$` and `Given Expression: ab+bc+ac=abc`. The 'Lexemes' section displays a table of tokens extracted from the input expression.

Lexemes	Address	Type
ab	0x7ffd99dde980	Identifier
+	0x7ffd99dde982	Operator
bc	0x7ffd99dde983	Identifier
+	0x7ffd99dde985	Operator
ac	0x7ffd99dde986	Identifier
=	0x7ffd99dde988	Operator
abc	0x7ffd99dde989	Identifier