



SNS COLLEGE OF TECHNOLOGY



Coimbatore-36.

An Autonomous Institution

Accredited by NBA – AICTE and Accredited by NAAC – UGC with ‘A++’ Grade
Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai

COURSE NAME : Automata Theory and Compiler Design
III YEAR/ V SEMESTER

UNIT – II INTRODUCTION AND LEXICAL ANALYSIS

Topic: Compiler Construction Tools

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Compiler Construction Tools



Compiler Construction Tools are specialized tools that help in the implementation of various phases of a compiler. These tools help in the creation of an entire compiler or its parts.

- Some of the commonly used compiler constructions tools are:-
 - Parser Generator
 - Scanner Generator
 - Syntax Directed Translation Engines
 - Automatic Code Generators
 - Data-Flow Analysis Engines
 - Compiler Construction Toolkits

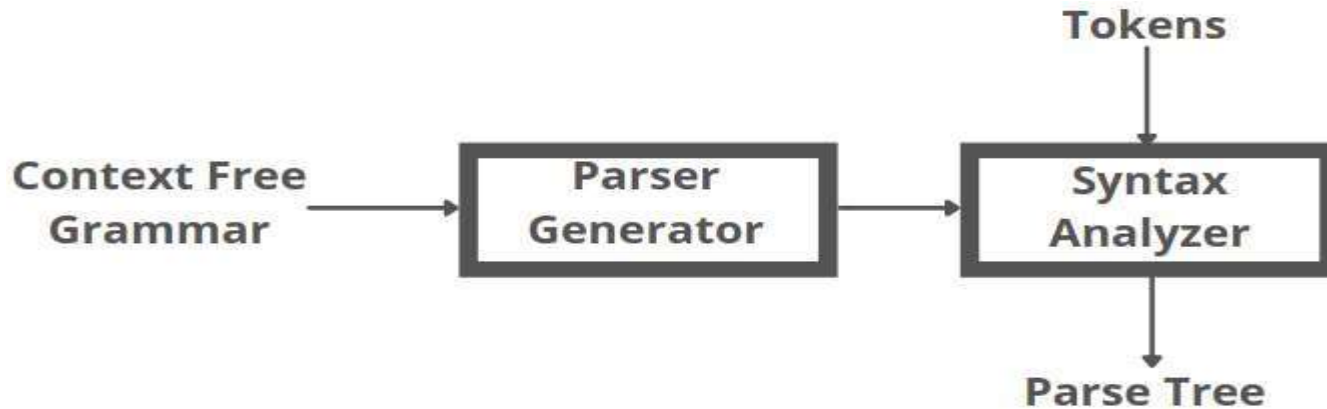


Compiler Construction Tools



Parser Generator

Parser Generator produces syntax analyzers (parsers) based on context-free grammar that takes input in the form of the syntax of a programming language. It's helpful because the syntax analysis phase is quite complex and takes more compilation and manual time.



Scanner Generator

Scanner Generator generates lexical analyzers from the input that consists of regular expression descriptions based on tokens of a language. It generates a finite automaton to identify the regular expression.



Compiler Construction Tools



Syntax Directed Translation Engines

Syntax Directed Translation Engines take a parse tree as input and generate intermediate code with three address formats. These engines contain routines to traverse the parse tree and generate intermediate code. Each parse tree node has one or more translations associated with it.

Automatic Code Generators

Automatic Code Generators take intermediate code as input and convert it into machine language. Each intermediate language operation is translated using a set of rules and then sent into the code generator as an input. A template matching process is used, and by using the templates, an intermediate language statement is replaced by its machine language equivalent.



Compiler Construction Tools



Data-Flow Analysis Engines

Data-Flow Analysis Engines is used for code optimization and can generate an optimized code. Data flow analysis is an essential part of code optimization that collects the information, the values that flow from one part of a program to another.

Compiler Construction Toolkits

Compiler Construction Toolkits provide an integrated set of routines that helps in creating compiler components or in the construction of various phases of a compiler.

