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Compiler design
Chapter-2: Introduction to syntax analysis

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Content

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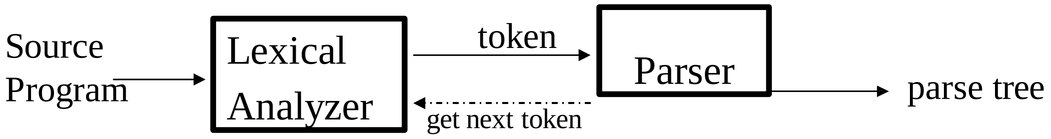
Role Of Parser :

- Role of parser consist Syntax Analyzer
- Syntax Analyzer creates the syntactic structure of the given source program.
- This syntactic structure is mostly a parse tree.
- Syntax Analyzer is also known as parser.
- The syntax of a programming is described by a context-free grammar (CFG). We will use BNF (Backus Naur Form) notation in the description of CFGs.
- The syntax analyzer (parser) checks whether a given source program satisfies the rules implied by a context-free grammar or not.

Parser

- Parser works on a stream of tokens.
- The smallest item is a token.



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- We categorize the parsers into two groups:

1. **Top-Down Parser**
   - the parse tree is created top to bottom, starting from the root.
2. **Bottom-Up Parser**
   - the parse is created bottom to top; starting from the leaves

- Both top-down and bottom-up parsers scan the input from left to right (one symbol at a time).
- Efficient top-down and bottom-up parsers can be implemented only for sub-classes of context-free grammars.
  - LL for top-down parsing
  - LR for bottom-up parsing

PPT Content Resources Reference Sample:

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2. **Journal Article**

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3. **Website Reference**

   GeeksforGeeks. (2024). *Structure of a compiler*. Retrieved November 7, 2025, from https://www.geeksforgeeks.org/structure-of-compiler/ .

   1. **Conference Presentation**

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4. **Report**

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5. **Sources**

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