CHAPTER 10

- **BNF (Backus-Naur Form):** The most widely used notation for representing the syntax of a programming language.

- **Code optimization:** The process in which the compiler determines whether the machine language translation of a high-level language program can be made more efficient.

- **Compiler:** A piece of system software that translates a high-level language program into a machine language program.

- **Grammar:** The entire collection of BNF rules for a particular language.

- **Integrated development environment:** A compiler embedded within a collection of supporting routines, such as debuggers, editors, and libraries.

- **Lexical analyzer:** The program that performs lexical analysis; also called a scanner.

- **Lexical analysis:** Examining the individual characters in the source program and grouping them into tokens.

- **Nonterminal:** A type of object used in a BNF rule that is not an actual element of the language but rather an intermediate grammatical category used to help explain and organize the language.

- **Object program:** A machine language program.

- **Parse tree:** A structure that starts from the individual tokens in a statement, and shows how these tokens can be grouped into predefined grammatical categories until the desired goal is reached.

- **Parsing:** The process of diagramming a high-level language statement.

- **Production:** A BNF component that provides the definition of a grammatical category; also called a rule.

- **Recursive definition:** A BNF rule that defines a nonterminal symbol in terms of itself.

- **Rule:** A BNF component that provides the definition of a grammatical category; also called a production.

- **Scanner:** The program that performs lexical analysis; also called a lexical analyzer.

- **Semantic analysis:** The process in which the compiler determines whether a high-level language statement is meaningful.

- **Semantic record:** A data structure that stores information about a nonterminal.

- **Source program:** A high-level language program.

- **Syntax:** The grammatical structure of a language.

- **Terminals:** Objects, used in BNF rules, that are tokens of the language recognized and returned by a scanner.

- **Tokens:** Syntactical units that are treated as single, indivisible entities for the purposes of translation.