Syntax of Languages

Text-based messages and languages have higher-level syntactic properties. These syntactic rules are known as **grammatical rules**. The grammar of natural languages has evolved historically, and the grammatical correctness of a given text is not always clear-cut. In contrast, the syntax of artificial languages is much more precise. Among the languages constructed to replace natural languages, the most famous and significant is **Esperanto**, created by Zamenhof. Languages built for scientific and technical purposes are subject to strict requirements. From an information science perspective, **mathematical axiom systems** can be considered languages.

The languages created by **computer science** and **information technology** describe computer programs, control programs, protocols, data, facts, and knowledge bases.

- **Processor instruction sets**

- **Programming languages**:
    - **Assembly languages**
    - **Sequential languages**:
        - ENGLISH, FORTRAN, COBOL, PL 1
        - BASIC, Visual Basic
        - PASCAL, Delphi
        - C, C++, Visual C++
        - ADA
        - Java, J++, Perl, PhP
    - **Logical languages**:
        - LISP, PROLOG
- **Command languages**: BASH
- **Configuration languages**: YAML, JSON
- **Object description languages**: HTML, XML, EDI
- **Simulation languages**: SIMAN, TLI
- **Technical programming languages**
    - **CNC programming languages**:
        - ISO NCL, APT, EXAPT CLD
    - **Robot programming languages**:
        - VAL, AML

Using **languages**, complex expressions can be created by applying terminal symbols, keywords, and rules. A **program** is an ordered set of such expressions. A program is a finite sequence of expressions written in a programming language, representing a computer-interpretable and executable realization of an algorithm.