

Section 03. Smart Solutions in IT

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Programming and natural language comparison

Programming is a difficult field and its principles and bases are not always clear for users. Human language is more understandable therefore it would be expedient to find differences and similarities between programming languages and natural language.

At first, what a programming language is? A programming language is an artificial language designed to provide communication instructions with a machine. Also we should keep in mind that there is difference between “computer language” and “programming language”. Not all programming languages are computer language.

The description of a programming language is usually split into the two components of syntax (form) and semantics (meaning). The syntax of a language describes the possible combinations of symbols that form a syntactically correct program. The meaning given to a combination of symbols is handled by semantics.

This component shows similarity between natural and programming languages. Programming languages which are textual consist of sequences of text including words, numbers, and punctuation, much like written natural languages. But not all syntactically correct programs are semantically correct.

Programming languages share some properties with natural languages related to their purpose as vehicles for communication. Some of them show language families of related languages branching one from another (C family, Pascal family).

A significant difference is that a programming language can be fully described and studied and by contrast natural languages have changing meanings given by their users in different communities.

Human speakers can be ambiguous and make small mistakes and still will be understood. But when you use programming language you should make full explanation to the machine because it "does exactly what they are told to do", and cannot "understand" what code the programmer intended to write.

As a conclusion we see that there are both differences and similarities between human and programming languages. And sometimes good English language knowledge can help comprehend programming.