

Lexical and syntactical structures in programming language Lua

Abstract

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Lua is lightweight scripting language that offers extensible semantics and portability. This presentation outlines lexical and syntactical structures of Lua and can be used as brief tutorial or quick reference. Main source for this presentation is Lua Reference Manual. The reader should be familiar with the basics of programming and scripting languages and the compiler construction. The presentation consists of two parts - lexical structures and syntactical structures.

The first part, “Lexical structures”, describes identifier format and keywords, string formatting and escape sequences, number constants, one line and multi-line comments. Each lexeme is demonstrated using simple Lua source code example and is compared to lexeme in similar programming language where needed to.

“Syntactical structures” part describes all statements available in Lua language from syntactical point of view. Statements are demonstrated using Lua source code example and formally defined with extended BNF. First of all, program chunks and statement separation are covered. Using these, control structures and various use of for statements are defined. The rest of the presentation covers expressions and variable assignments, functions definitions and calls, local variables, arithmetical, relational, and logic operators together with string concatenation and length operator. The last part describes the list structures in Lua language called tables.