

The Complete Syntax of Lua

[From the Lua 5.3 manual.] Here is the complete syntax of Lua in extended BNF. For operator precedences, see §3.4.8; for a description of the terminals Name, Numeral, and String, see §3.1.

Chunk: Block

Block: { Stmt } [RetStmt]

Stmt: ;

- | VarList = ExprList
- | Call
- | Label
- | **break**
- | **goto** Name
- | **do** Block **end**
- | **while** Expr **do** Block **end**
- | **repeat** Block **until** Expr
- | **if** Expr **then** Block { **elseif** Expr **then** Block } [**else** Block] **end**
- | **for** Name = Expr , Expr [, Expr] **do** Block **end**
- | **for** NameList **in** ExprList **do** Block **end**
- | **function** FuncName FuncBody
- | **local function** Name FuncBody
- | **local** NameList [= ExprList]

RetStmt: **return** [ExprList] [;]

Label: :: Name ::

FuncName: Name { . Name } [: Name]

VarList: Var { , Var }

Var: Name | PrefixExpr [Expr] | PrefixExpr . Name

NameList: Name { , Name }

ExprList: Expr { , Expr }

Expr: **nil** | **false** | **true** | Numeral | String | ... | Function
| PrefixExpr | TableConstructor | Expr BinOp Expr | UnOp Expr

PrefixExpr: Var | Call | (Expr)

Call: PrefixExpr Args | PrefixExpr : Name Args

Args: ([ExprList]) | TableConstructor | String

Function: **function** FuncBody

FuncBody: ([ParamList]) Block **end**

ParamList: NameList [, ...] | ...

TableConstructor: { [FieldList] }

FieldList: Field { FieldSep Field } [FieldSep]

Field: [Expr] = Expr | Name = Expr | Expr

FieldSep: , | ;

BinOp: + | - | * | / | // | ^ | % | & | ~ | | | >> | <<
| .. | < | <= | > | >= | == | ~= | **and** | **or**

UnOp: - | **not** | # | ~