

xx FIT LANGUAGE

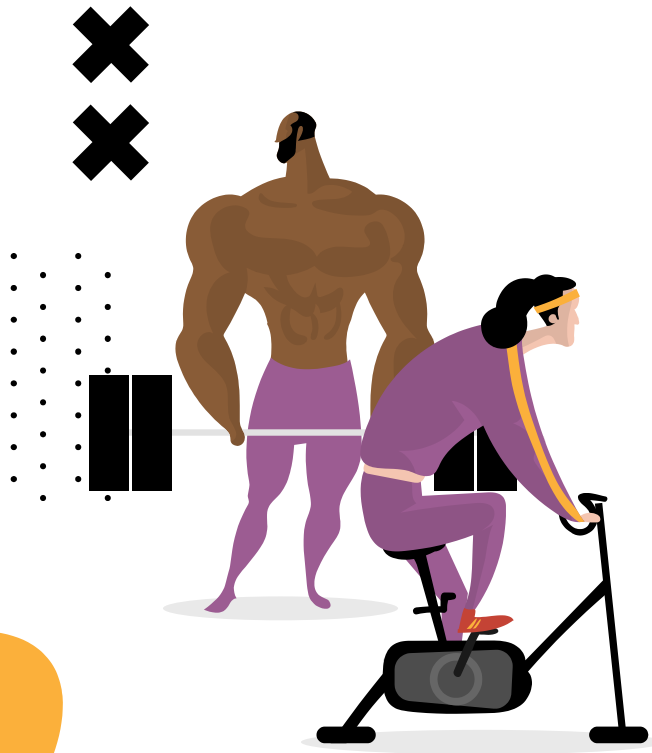


Leonardo da França Moura de Andrade

INTRODUÇÃO

Uma nova linguagem de programação criada para facilitar a elaboração de planos de treino de exercícios físicos. Projetada com uma sintaxe intuitiva e inspirada em termos do mundo fitness, essa linguagem permite a criação de variáveis, condições, loops, comandos de impressão e entrada de dados de maneira simples.





A motivação para criar esta linguagem de programação surgiu da minha paixão por dois mundos que amo: a **computação** e a **academia**.

Como desenvolvedor, sempre apreciei a lógica e a estrutura das linguagens de código. Já como entusiasta desse mundo fitness, reconheço a importância de um planejamento de treino bem estruturado.

Unir essas duas paixões resultou em uma ferramenta que facilita a criação de planos de treino personalizados e eficientes, ajudando a transformar o processo de exercício físico em algo mais interessante.

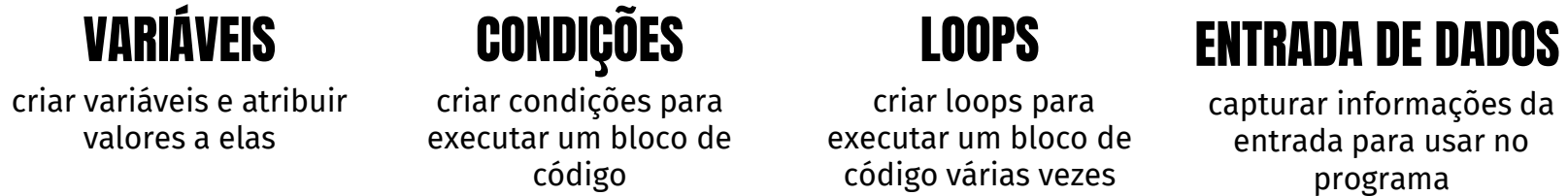
MOTIVAÇÃO



ESTRUTURAS



O USUÁRIO PODE UTILIZAR



CARACTERÍSTICAS

A linguagem possui as seguintes alterações nas palavras-chave, no contexto do .lua:

while -> **during**

if -> **workout_day**

else -> **rest_day**

print -> **display**

end -> **workout_finished**

local -> **weight**

+ (Add) -> **more_load**

- (Sub) -> **less_load**

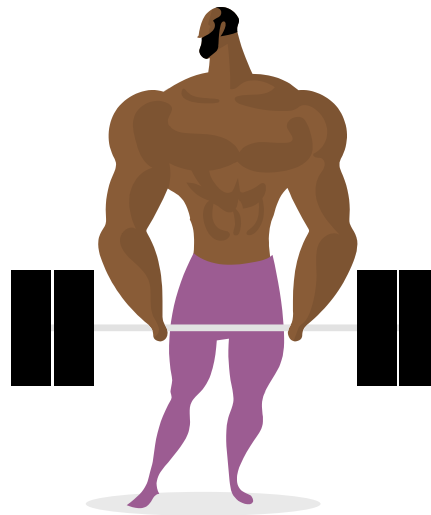
== (Equal) -> **same_as**

> (Greater) -> **heavier_than**

< (Less) -> **lighter_than**

read() -> **receive()**

Not, and, or, *, / -> o mesmo que no .lua



EBNF

```
BLOCK = { STATEMENT };  
STATEMENT = ( "λ" | ASSIGNMENT | LOCAL | PRINT | WHILE | IF ), "\n";  
ASSIGNMENT = IDENTIFIER, "=", EXPRESSION;  
LOCAL = "weight", IDENTIFIER, ("λ" | ("=", BOOL_EXP));  
PRINT = "display", "(", EXPRESSION, ")";  
WHILE = "during", BOOL_EXP, "do", "\n", "λ", { ( STATEMENT ), "λ" }, "workout_finished";  
IF = "workout_day", BOOL_EXP, ":", "\n", "λ", { ( STATEMENT ), "λ" }, ( "λ" | ( "rest_day", ":", "\n", "λ", { ( STATEMENT ), "λ" } ) ),  
"workout_finished";  
BOOL_EXP = BOOL_TERM, { ("or"), BOOL_TERM };  
BOOL_TERM = REL_EXP, { ("and"), REL_EXP };  
REL_EXP = EXPRESSION, { ("same_as" | "heavier_than" | "lighter_than"), EXPRESSION };  
EXPRESSION = TERM, { ("more_load" | "less_load" | ".."), TERM };  
TERM = FACTOR, { ("*" | "/" ), FACTOR };  
FACTOR = NUMBER | STRING | IDENTIFIER | (( "more_load" | "less_load" | "not" ), FACTOR ) | "(", EXPRESSION, ")" |  
"receive", "(", ")" ;  
IDENTIFIER = LETTER, { LETTER | DIGIT | "_" };  
NUMBER = DIGIT, { DIGIT };  
STRING = "'", { LETTER | DIGIT }, "'";  
LETTER = ( "a" | "..." | "z" | "A" | "..." | "Z" );  
DIGIT = ( "1" | "2" | "3" | "4" | "5" | "6" | "7" | "8" | "9" | "0" );
```

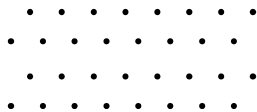




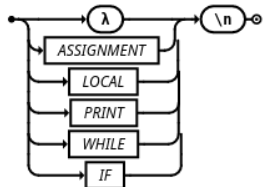
DIAGRAMA SINTÁTICO



BLOCK:



STATEMENT:



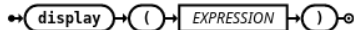
ASSIGNMENT:



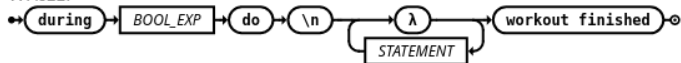
LOCAL:



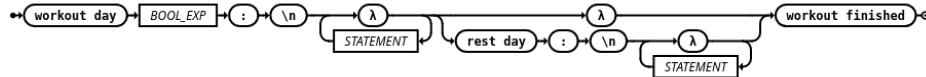
PRINT:



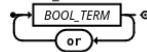
WHILE:



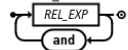
IF:



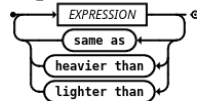
BOOL_EXP:



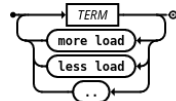
BOOL_TERM:



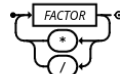
REL_EXP:



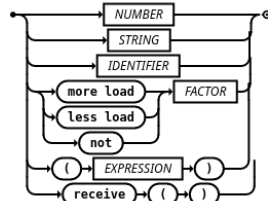
EXPRESSION:



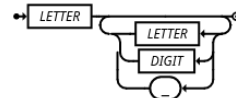
TERM:



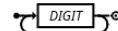
FACTOR:



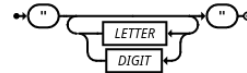
IDENTIFIER:



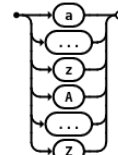
NUMBER:



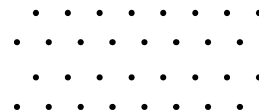
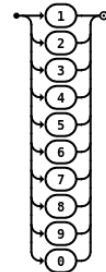
STRING:



LETTER:



DIGIT:



EXEMPLO DE CÓDIGO



```
display(2)
display("hello")
display(4 more_load 1)
```

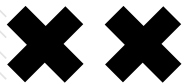
```
weight a = 2 less_load 1
a = less_load 50
during a heavier_than 1 do
  a = 1
  display(a)
  workout_finished
```

```
workout_day a heavier_than 1:
  display(a)
rest_day:
  display(a)
  workout_finished
```

```
weight sets = 4
workout_day sets heavier_than 3 :
  display ("You are pushing yourself!")
  display ("You can do more sets!")
  workout_finished
```

```
weight benchpress = 30
weight squat = 50
weight deadlift = 60
during squat heavier_than benchpress do
  display ("You are stronger in squats!")
  squat = squat less_load 5
  display (squat)
  workout_finished
```

```
weight input = receive()
display(input)
```

OBRIGADO!

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