

VINICIUS MESQUINI 0093/19

Exercício 1: Qual a gramática regular que representada pelas seguintes expressões regulares.

a) a^*b^*

$G = (\{S, A, B\}, \{a, b\}, P, S)$

P:

$S \rightarrow AB.$

$A \rightarrow a \mid aA \mid \text{vazio}$

$B \rightarrow b \mid bB \mid \text{vazio}$

b) $(a+b)^* = \text{aaa ou bbb}$

$G = (\{S, A, B\}, \{a, b\}, P, S)$

P:

$S \rightarrow AB.$

$A \rightarrow aA \mid aB \mid \text{vazio}$

$B \rightarrow bB \mid bA \mid \text{vazio}$

c) $a(a+b)^*b = \text{aaab}$

$G = (\{S, A, B\}, \{a, b\}, P, S)$

P:

$s \rightarrow AB$

$A \rightarrow aA \mid AB \mid \text{vazio}$

$B \rightarrow b$

d) $a^*ba^*ba^* = \text{bb ou ababa}$

$G = (\{S, A, B\}, \{a, b\}, P, S)$

P:

$s \rightarrow AB$

$A \rightarrow a \mid BA \mid aA \mid \text{vazio}$

$B \rightarrow bA$

e) $(a+b)*(aa+bb)$

$G = (\{S, A, B\}, \{a, b\}, P, S)$

P:

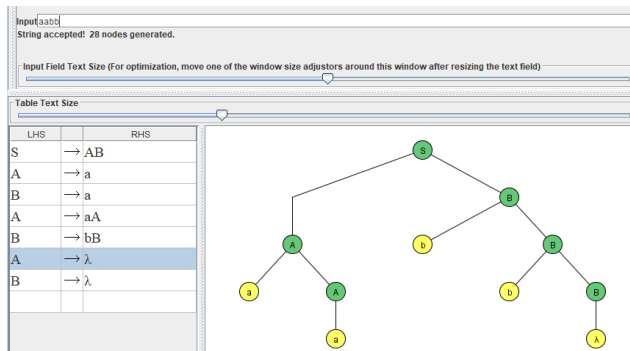
$S \rightarrow AB$

$A \rightarrow aA \mid aa \mid \text{vazio}$

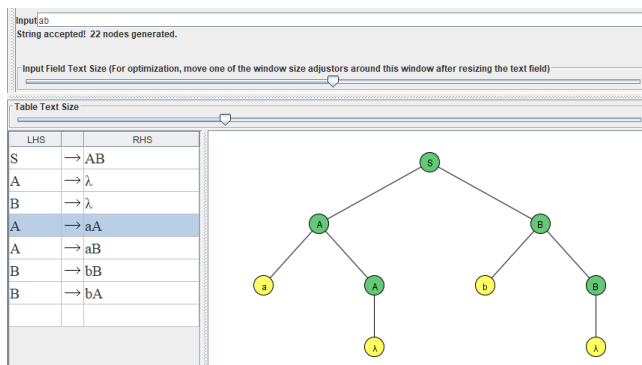
$B \rightarrow bB \mid bb \mid \text{vazio}$

Exercício 2: Teste as gramáticas regulares criadas no exercício anterior no JFLAP.

a) $a*b^*$



b) $(a+b)^*$



c) $a(a+b)*b$

JFLAP: <untitled4>

File Input Test Convert Help

Editor Brute Parser

Start Pause Step Noninverted Tree

Input: `aaab`

String accepted! 45 nodes generated.

Input Field Text Size (For optimization, move one of the window size adjusters around this wind...)

Table Text Size

LHS	RHS
S	→ AB
A	→ aA
A	→ λ
A	→ AB
B	→ b

Derived b from B. Derivations complete.

d) $a*ba*ba*$

JFLAP: <untitled4>

File Input Test Convert Help

Editor Brute Parser

Start Pause Step Noninverted Tree

Input: `ababa`

String accepted! 452 nodes generated.

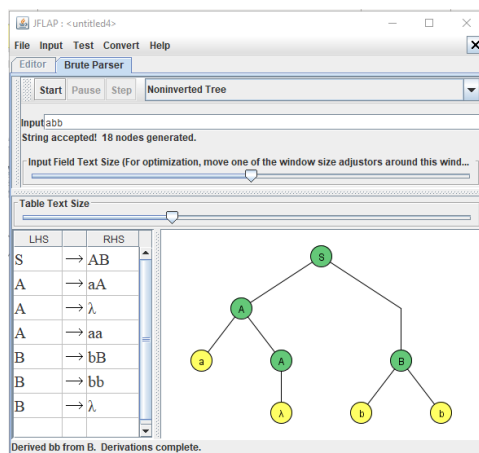
Input Field Text Size (For optimization, move one of the window size adjusters around this wind...)

Table Text Size

LHS	RHS
S	→ AB
A	→ aA
A	→ λ
A	→ BA
A	→ a
B	→ bA

Derived a from A. Derivations complete.

e) $(a+b)*(aa+bb)$



Exercício 3: Teste a gramáticas abaixo no JFLAP

$$P = \left\{ \begin{array}{l} S \rightarrow Dig \\ Dig \rightarrow 0Dig | 1Dig | \dots | 9Dig | 0 | 1 | 2 | \dots | 9 \end{array} \right\}$$

