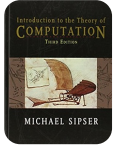


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## Exercício 14

Capítulo 2, Página 156



Introduction to the Theory of Computation

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**Solução**



Certificado

Solução fornecida há 2 anos

**Passo 1**

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(Note: yellow is chosen specifically because it is not well visible (and since grey is not available).)

We follow the template from *Example 2.10*, coming immediately after **Theorem 2.9**.

1. First we add a new start variable  $A_0$ .

$$\begin{array}{ll} A \rightarrow BAB \mid B \mid \varepsilon & A_0 \rightarrow A \\ B \rightarrow 00 \mid \varepsilon & B \rightarrow 00 \mid \varepsilon \end{array}$$

2. Secondly we remove  $\varepsilon$ -rules. (Note that in performing this step we exclude string  $\varepsilon$  from language of grammar. This is the only string we lose in the process).

$$\begin{array}{ll} A_0 \rightarrow A & A_0 \rightarrow A \\ A \rightarrow BAB \mid B \mid \varepsilon & A \rightarrow BAB \mid \mathbf{BB} \mid B \mid \mathbf{AB} \mid \mathbf{BA} \mid \mathbf{A} \\ B \rightarrow 00 \mid \varepsilon & B \rightarrow 00 \mid \varepsilon \end{array}$$

3. Thirdly we remove all unit rules.

$$\begin{array}{ll} A_0 \rightarrow A & A_0 \rightarrow \mathbf{A} \mid \mathbf{BAB} \mid \mathbf{BB} \mid 00 \mid \mathbf{AB} \mid \mathbf{BA} \\ A \rightarrow BAB \mid BB \mid B \mid 00 \mid AB \mid BA \mid A & A \rightarrow BAB \mid BB \mid 00 \mid AB \mid BA \mid \mathbf{A} \\ B \rightarrow 00 & B \rightarrow 00 \end{array}$$

4. Lastly we add additional variables, to obtain the equivalent grammar in Chomsky form.

$$\begin{array}{l} A_0 \rightarrow BA_1 \mid BB \mid ZZ \mid AB \mid BA \\ A \rightarrow BA_1 \mid BB \mid ZZ \mid AB \mid BA \\ B \rightarrow ZZ \\ Z \rightarrow 0 \\ A_1 \rightarrow AB \end{array}$$

**Resultado**

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We perform the procedure, as explained in *Example 2.10*.

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Avaliar esta solução



Exercício 15 >

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