

Ciências / Ciência da computação / Introduction to the Theory of Computation (3rd Edition)

Exercício 19

Capítulo 1, Página 86



Introduction to the Theory of Computation

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[Índice](#)**Solução** Certificado**Passo 1**

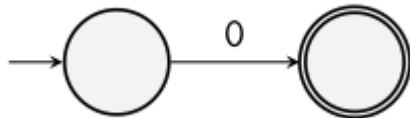
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Part a.

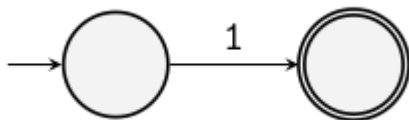
Lemma 1.55 instructs us to first build machines which accept simplest languages $\{0\}$ and $\{1\}$.

Passo 2

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**Passo 3**

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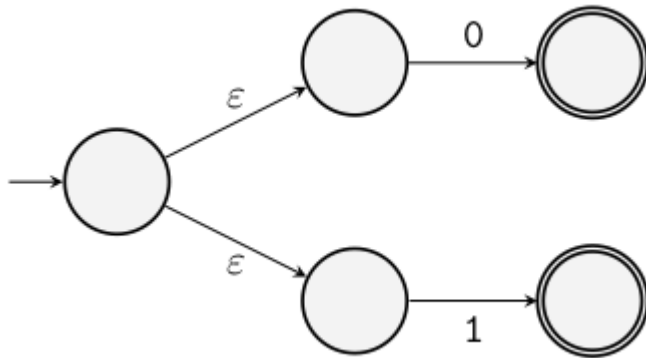
Passo 4

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Then we combine these two machines to obtain union of these simple languages, as described in **Theorem 1.45**.

Passo 5

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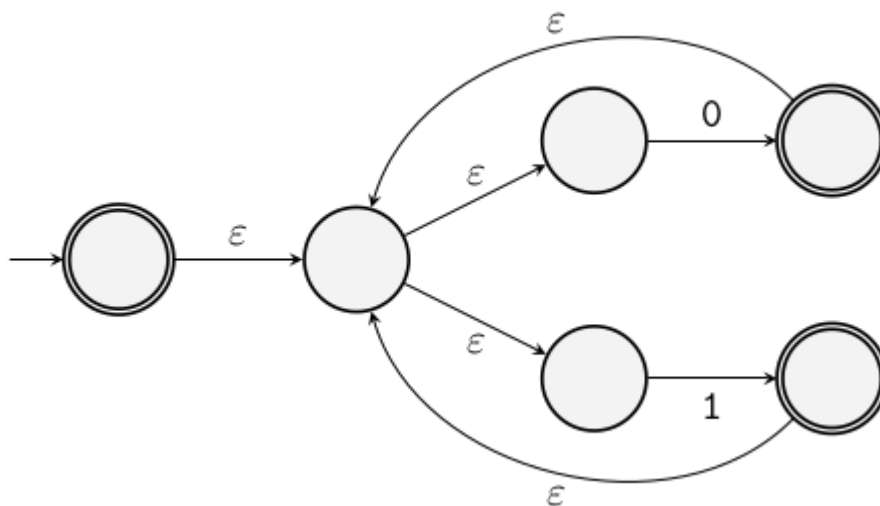
**Passo 6**

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Now we use construction for star of language, given in **Theorem 1.49**.

Passo 7

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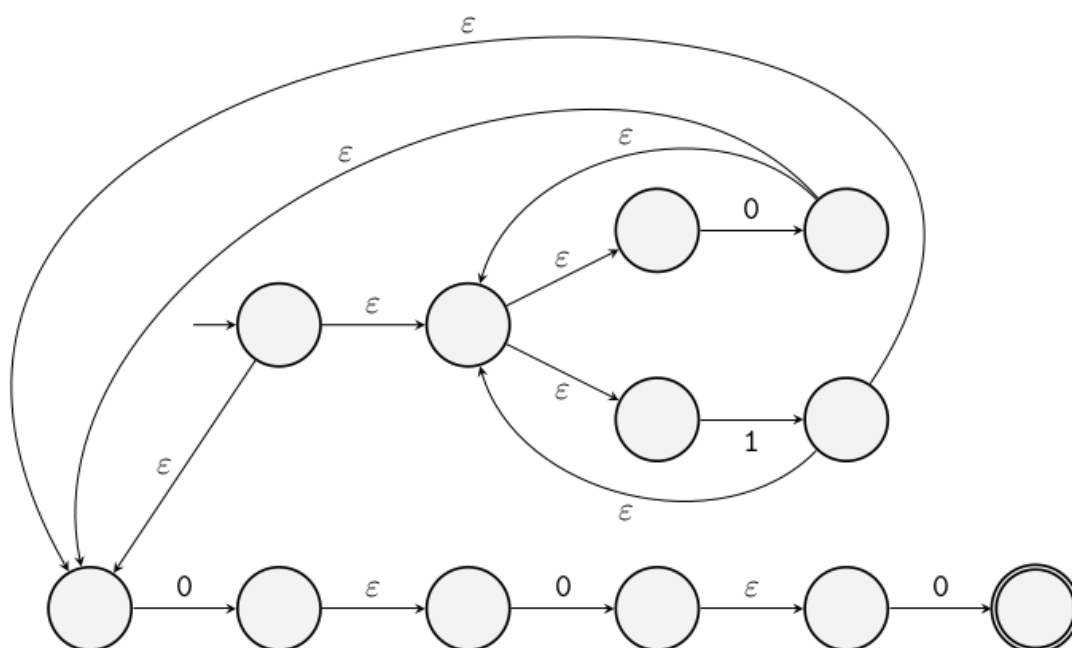
Passo 8

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Concatenating (described in **Theorem 1.47**) three times with machine which recognizes language $\{0\}$ yields following machine.

Passo 9

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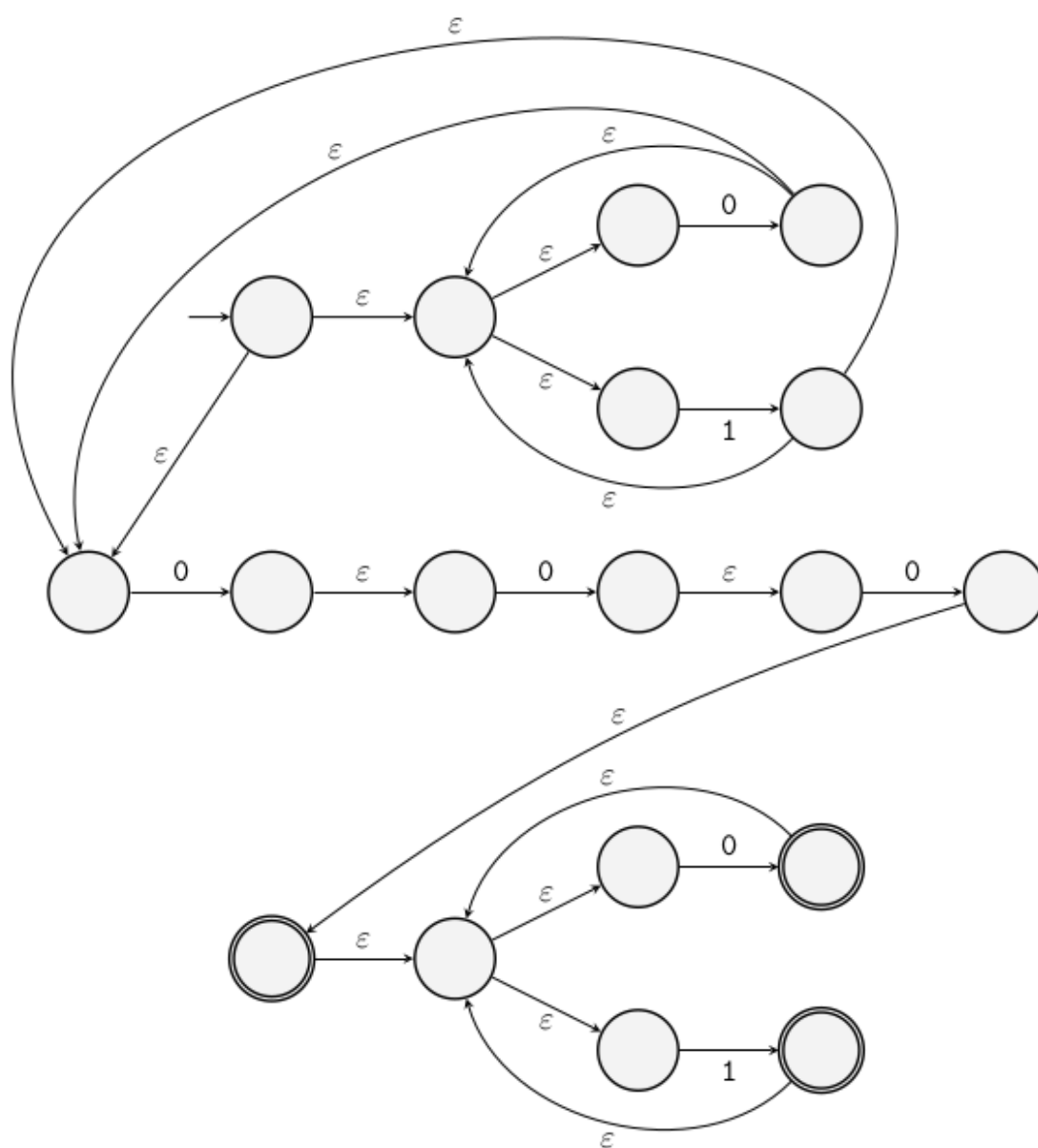
**Passo 10**

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Finally we concatenate with previous machine.

Passo 11

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**Passo 12**

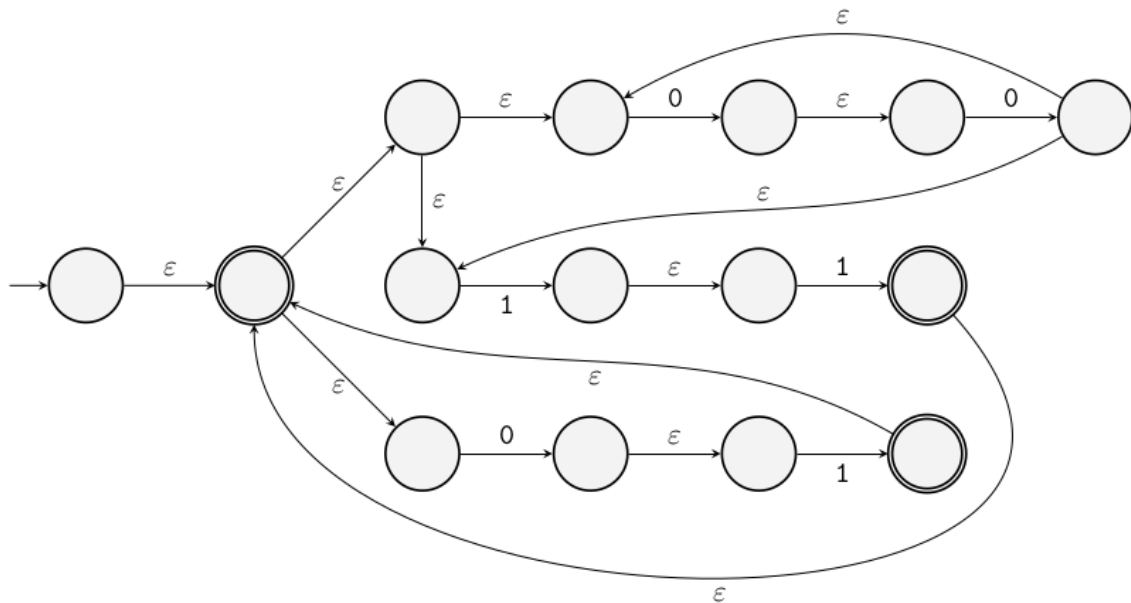
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Part b.

Passo 13

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Here we present only the final diagram.

**Passo 14**

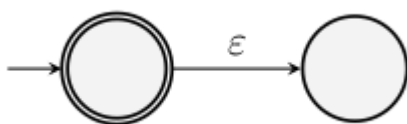
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Part c.

This is quite funny.

Passo 15

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**Resultado**

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Lemma 1.55 is quite pleasant to follow, we describe the procedure in part a.

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