

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

Exercício 17

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Introduction to the Theory of Computation

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[Índice](#)**Solução** Certificado Solução fornecida há 2 anos**Passo 1**

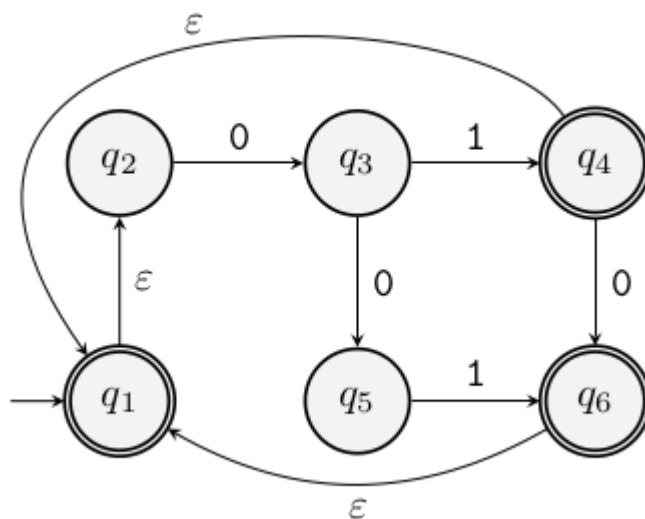
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Part a.

First we construct NFA for language $01 \cup 001 \cup 010$, which has only three strings and is therefore not complicated. Then we use construction from **Theorem 1.49** to extend this diagram to accept the star of language. Here is the final diagram.

Passo 2

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Passo 3

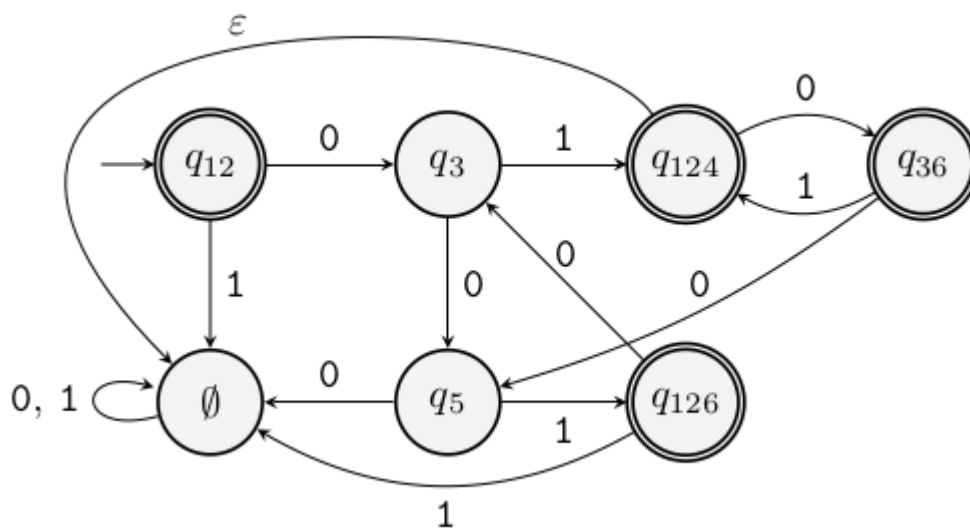
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Part b.

This will be a huge diagram, with $2^6 = 64$ states! Luckily, the *Exercise* only asks for part which is reachable from initial state. When we think about it, it actually only makes sense to consider this fragment of DFA, since the other part will never be reached in machine's computation.

Passo 4

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**Resultado**

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First think of machine which accepts the simple language, without the star. Then upgrade it following **Theorem 1.49**. Finally, use **Theorem 1.39** to convert NFA to DFA.

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