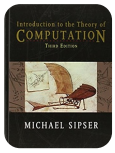
Exercício 5

Capítulo 2, Página 155



Introduction to the Theory of Computation

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Solução Certificado

Passo 1 1 de 11

Part a.

Pushdown automaton is actually a DFA, i.e. it does not use its stack. The state diagram is given in *Exercise 1.6*.

Part b.

This language is again regular, we draw a NFA recognizing it (it can also be regarded as PDA not using its stack). Informally, it branches on first symbol and then non-deterministically guesses the end of string (and checks whether last symbol is the same as first).

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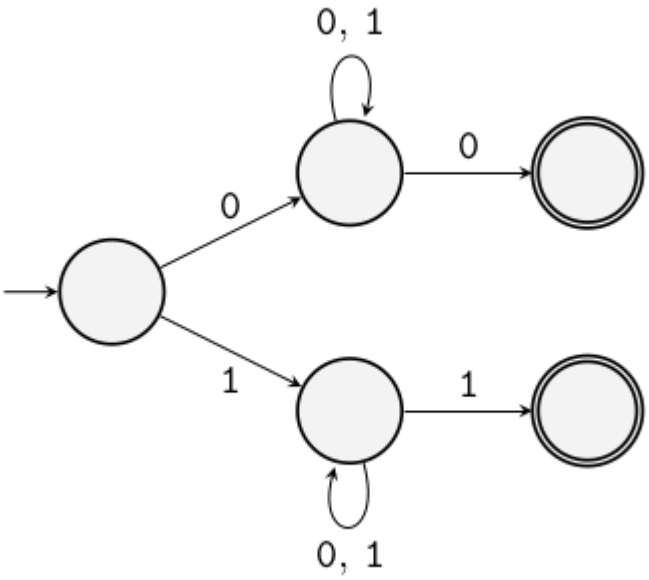

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Part c.

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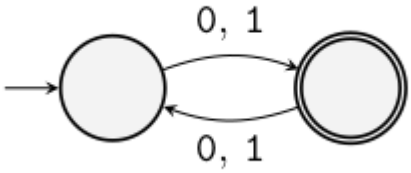

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Part d.

First we put symbol $ onto stack, and then symbol # in order to count the length of first part of string. On every 0 in input, the machine non-deterministically branches to determine whether that is the midpoint of string.

Passo 6

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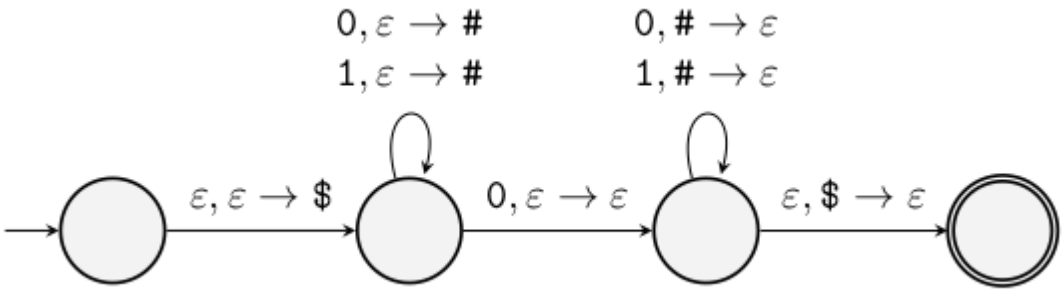

Passo 7

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Part e.

The idea is the same as in previous *Exercise*, just now we put the symbol read directly to stack, and branch without trigger.

Passo 8

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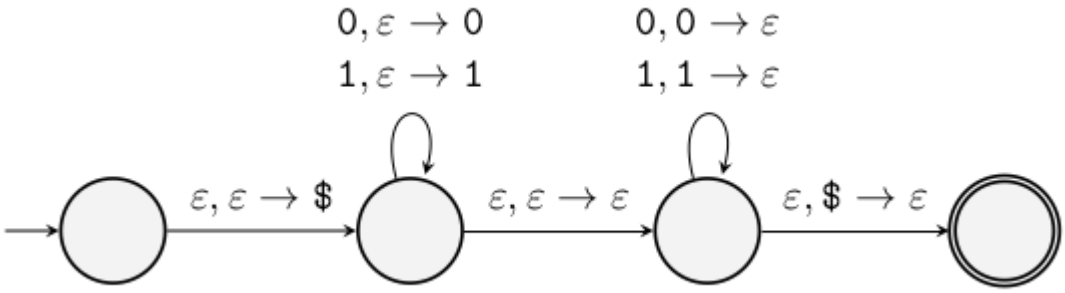

Passo 9

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Part f.

"Empty machine" recognizes empty language.

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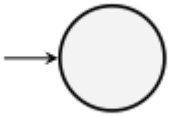

Resultado 11 de 11

We draw the machines.

‹ Exercício 4

Avaliar esta solução

☆ ☆ ☆ ☆ ☆

Exercício 6 ›