Problem

In certain programming languages, comments appear between delimiters such as /# and #/. Let C be the language of all valid delimited comment strings. A member of C must begin with /# and end with #/ but have no intervening #/. For simplicity, assume that the alphabet for C is ∑ = {a, b, /, #}.

a. Give a DFA that recognizes C.

b. Give a regular expression that generates C.

Step-by-step solution

Step 1 of 2

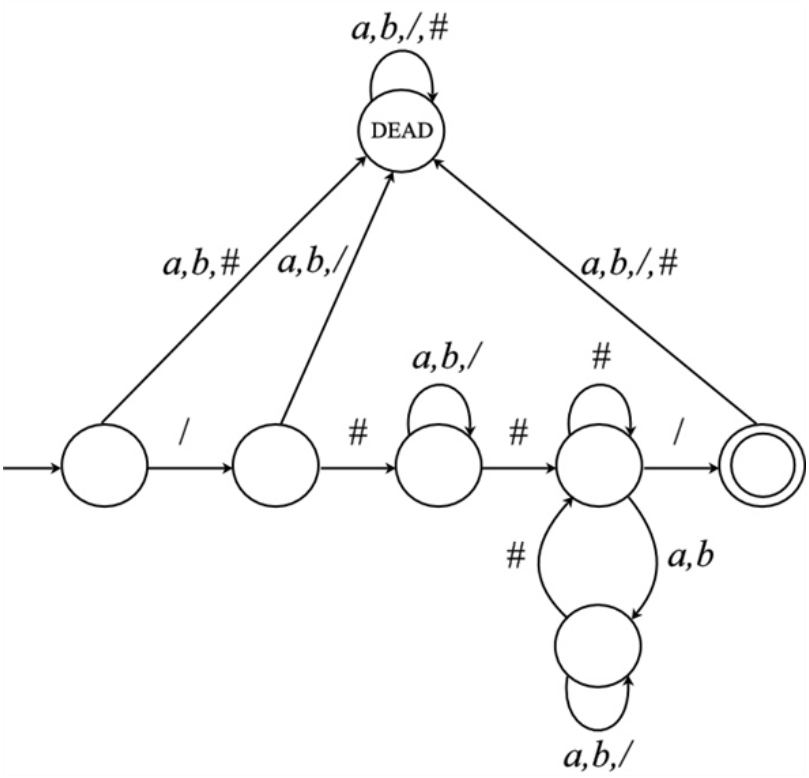
(a) Consider the language C of all valid delimited commented strings

• A member of C must begin with '/#' and end with '#/' but have no intervening '#/'.

• The alphabet of *C is* $\Sigma = \{a, b, /, \#\}$

Let *M* be the DFA that recognize the language C.

The state diagram of *M* is as follows



So this is the DFA that recognizes the languages of C.

Comments (2)

Step 2 of 2

(b) The regular expression that generates language C is,

$/\#\left(a+b+/\right)*\#(\#+(a+b)(a+b+/)*\#)*/$

Comments (3)