Problem

a. Give an NFA recognizing the language $(01 \cup 001 \cup 010)^*$.

b. Convert this NFA to an equivalent DFA. Give only the portion of the DFA that is reachable from the start state.

Step-by-step solution

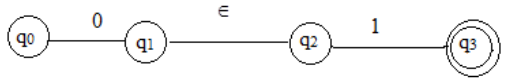
Step 1 of 2

(a) Given Language $L = (01 \cup 001 \cup 010)^*$

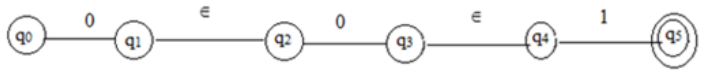
Assume that *M* as the NFA that recognizes language *L*.

The NFA *M* for the given language $L = (01 \cup 001 \cup 010)^*$ is as follows:

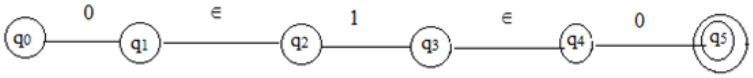
For string 01



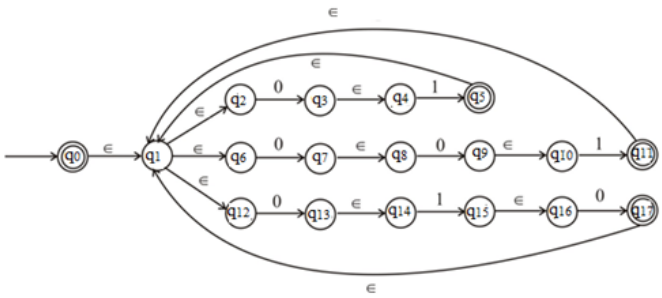
For string 001



For string 010



By joining all the above strings the final NFA for the $L = (01 \cup 001 \cup 010)^*$ is shown below:



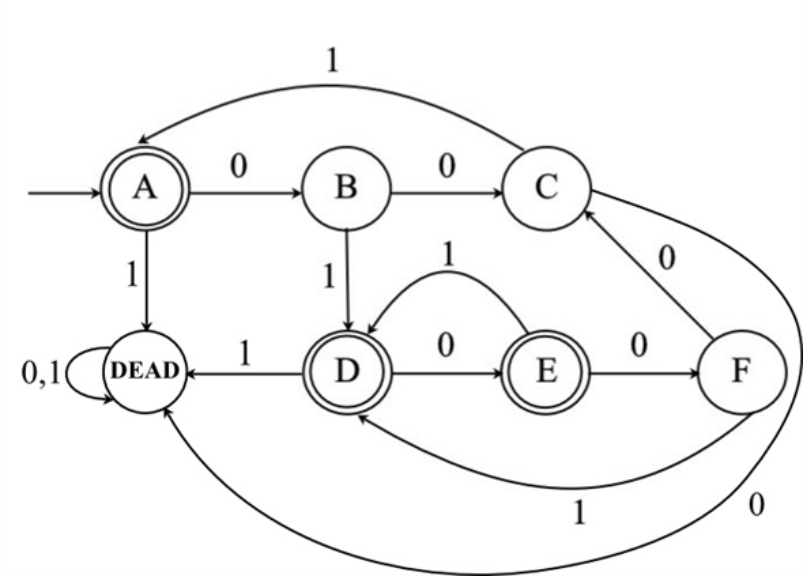
Comments (3)

Step 2 of 2

(b) Conversion of the NFA to DFA.

First remove all the $\in$ symbols in the NFA *M* and draw the transitions that are present in *M.*

The equivalent DFA for NFA for the Language $L = (01 \cup 001 \cup 010)^*$ is as follows:



Comments (2)