Problem

The formal description of a DFA M is {q1, q2, q3, q4, q5}, {u, d}, $\delta, q_3,$ q3, {q3}), where _ is given by the following table. Give the state diagram of this machine.

	u	d
q_1	q_1	q_2
q_2	q_1	q_3
q_3	q_2	q_4
q_4	q_3	q_5
q_5	q_4	q_5

Step-by-step solution

Step 1 of 1

Given formal description of DFA *M* is

$M = (Q, \Sigma, \delta, q_3, F)$

$Q =$ Set of states $= \{q_1, q_2, q_3, q_4, q_5\}$

$\Sigma =$ Set of alphabet $= \{u, d\}$

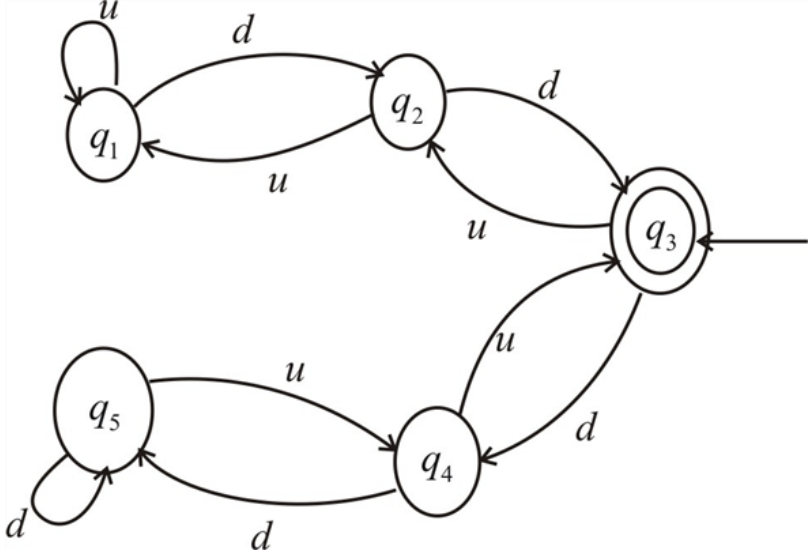
$\delta =$ The transition function is described as

	u	d
q_1	q_1	q_2
q_2	q_1	q_3
q_3	q_2	q_4
q_4	q_3	q_4
q_5	q_4	q_5

Start state $= \{q_3\}$ indicated with an arrow

Set of accept states Final state $= \{q_3\}$ indicated by double circle

Now we will construct state diagram by using the above details.



M

So this is the state diagram for the given description of machine *M*.

Comments (2)