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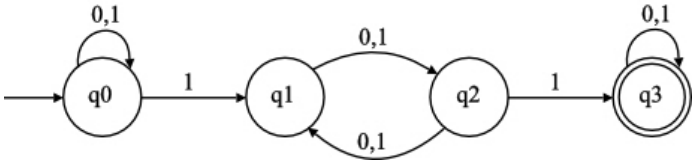
Consider the language *F* that accepts the strings over {0,1} that do not contain a pair of 1s that are separated by an odd number of symbols.

The complement of the language $\overline{F}$ accepts the strings over {0,1} that contain a pair of 1s that are separated by an odd number of symbols. The language accepts other strings as well.

The NFA for $\overline{F}$ is as follows:



The transition table for $\overline{F}$ is as follows:

State	0	1
q0	q0	{q0,q1}
q1	q2	q2
q2	q1	{q1,q3}
q3	q3	q3

Now, Convert the NFA to DFA.

The following are the steps to convert NFA to DFA:

Step 1: Create an empty set for the set of states of DFA. Initially $Q' = \phi$.

Step 2: Identify the start state in the NFA and make it as a start sate for the DFA. Add the initial state to the set of states of DFA.

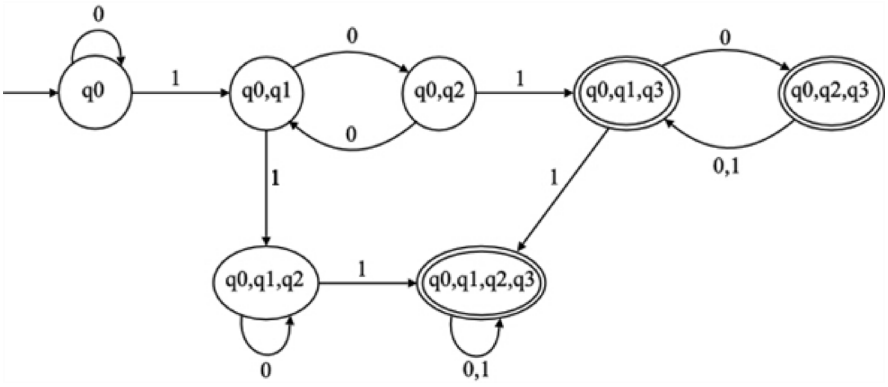
Step 3: For every new state find the possible set of states for each input symbol using transition function of NFA and add new states to Q'. Start the procedure with the initial state.

Step 4: If no new states are found then stop the procedure. The final state of DFA will be all states which contain final states of NFA.

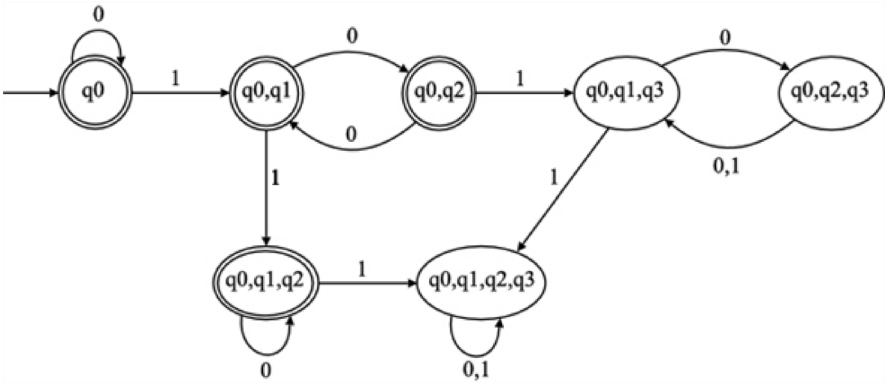
The transition table of the DFA is as follows:

State	0	1
q0	q0	{q0,q1}
{q0,q1}	{q0,q2}	{q0,q1,q2}
{q0,q2}	{q0,q1}	{q0,q1,q3}
{q0,q1,q2}	{q0,q1,q2}	{q0,q1,q2,q3}
{q0,q1,q3}	{q0,q2,q3}	{q0,q1,q2,q3}
{q0,q1,q2,q3}	{q0,q1,q2,q3}	{q0,q1,q2,q3}
{q0,q2,q3}	{q0,q1,q3}	{q0,q1,q3}

Draw the DFA using the above transition table.

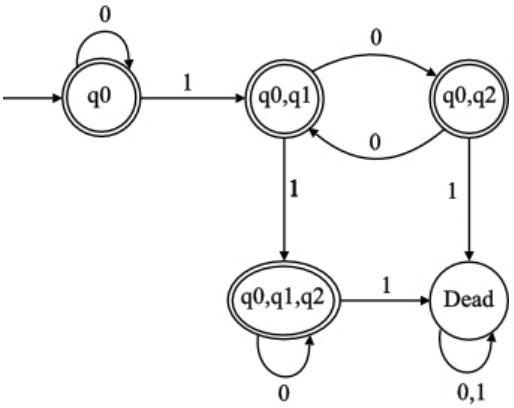


The above DFA should be complemented to get the DFA for the language *F*. Change the final states to non-final states and vice versa.



The states {q0,q1,q3}, {q0,q2,q3} and {q0,q1,q2,q3} are dead states. Combine all the three dead states into a single state.

The DFA after combining the 3 states is as follows:



Rename the states in the above DFA for simplicity. The minimized DFA that accepts the language *F* is as follows: