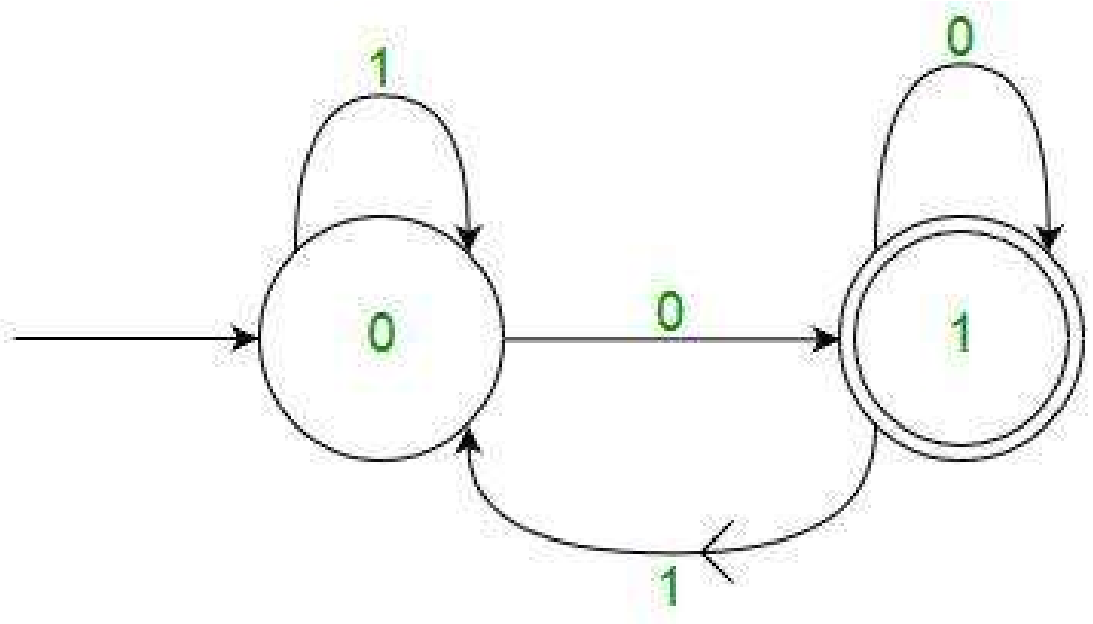


DFA

Example of DFA

Q. Construct DFA with all strings over {a,b} ending with ab

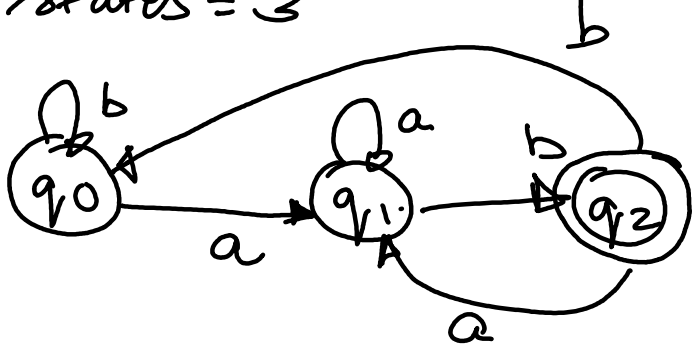
abb

abbbab

Ab

Min size = 2

No. of states = 3

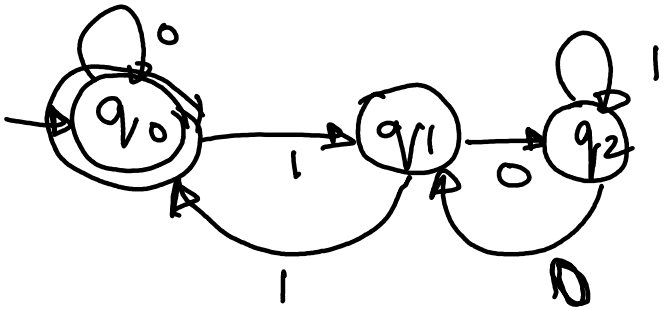


Example of DFA

Q. Construct DFA for all Binary numbers divisible by 3

Soln -

1



Remainders

✓ 0 → 00

✗ 1 → 01

✗ 2 → 10

3 →

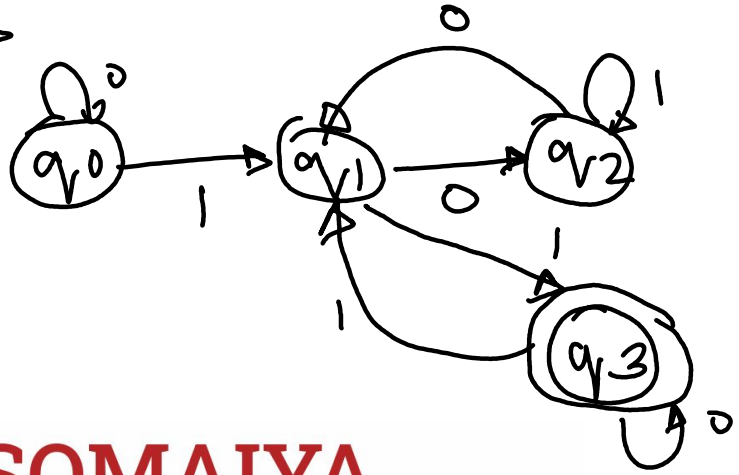
4

5

X

Soln

2

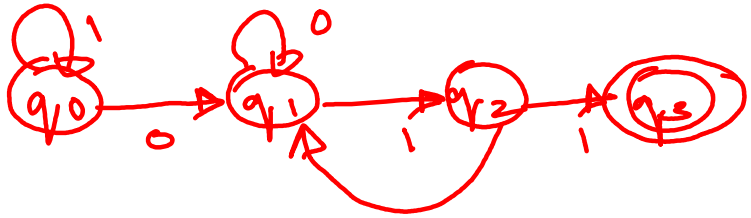


Example of DFA

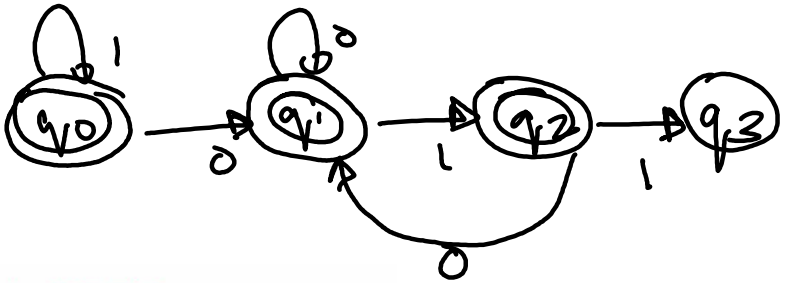
Q. Construct DFA for all possible conditions of 0's and 1's which does not have substring 011

→ Design DFA with substring 011

Min length = 3, No. of states = 4



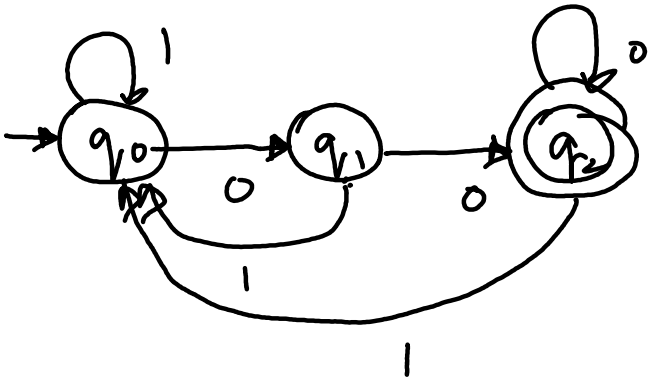
Invert the T.D.



Example of DFA

Q. Construct DFA that accepts a string which always ends with 00 over the alphabet {0,1}

Min length = 2; No. of states = 3



$M = \{\{q_0, q_1, q_2\}, \{0, 1\}, \delta, \{q_0\}, \{q_2\}\}$

δ

$\delta(q_0, 0) = q_1$

$\delta(q_0, 1) = q_0$

$\delta(q_1, 0) = q_2$

$\delta(q_2, 1) = q_0$

$\delta(q_2, 0) = q_2$

$\delta(q_2, 1) = q_0$

Example of DFA

Q. Draw a DFA for the language accepting strings containing three consecutive '0' over an input alphabet $\Sigma=\{0,1\}$