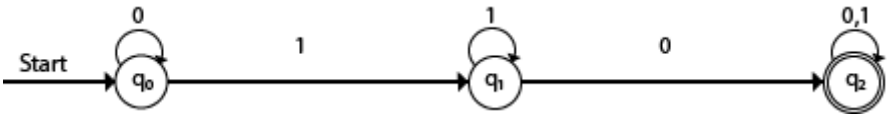
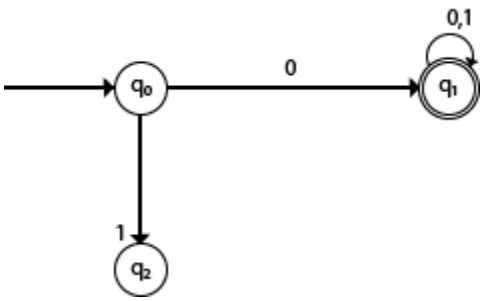
❖ DFA vs NFA: How to Identify?

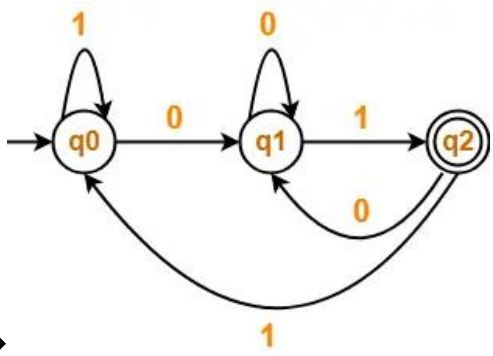
DFA →



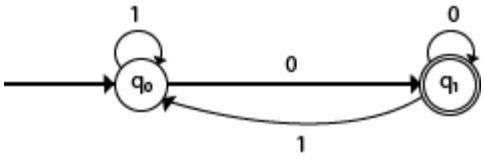
NFA →



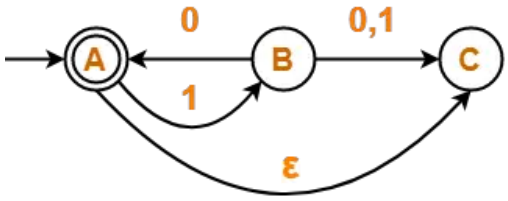
DFA →



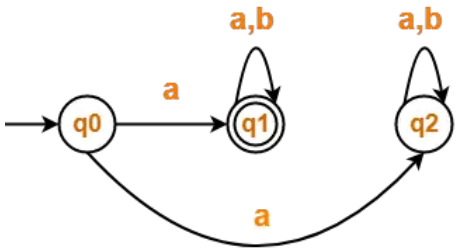
DFA →



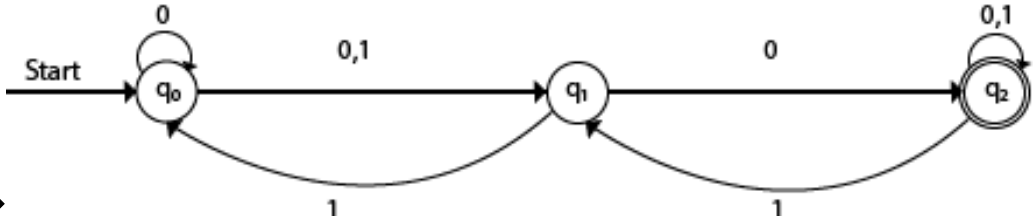
NFA →



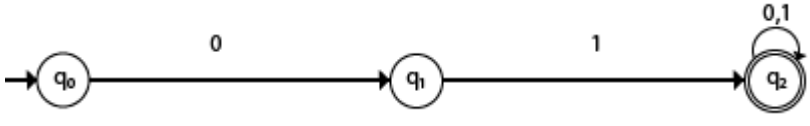
NFA →



NFA →



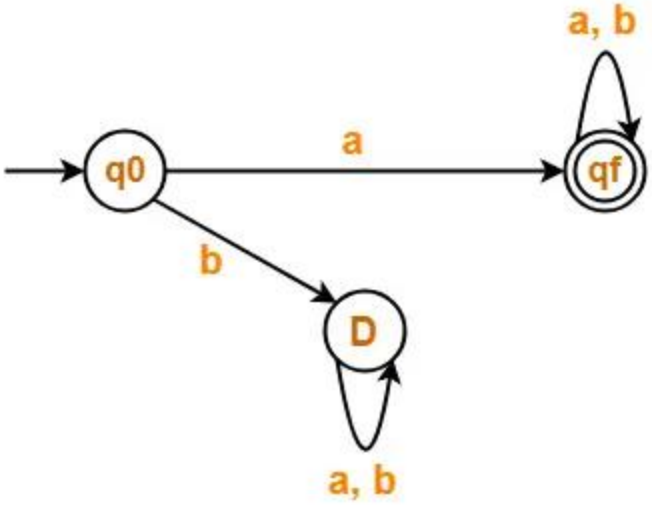
NFA →



❖ DFA practice problems:

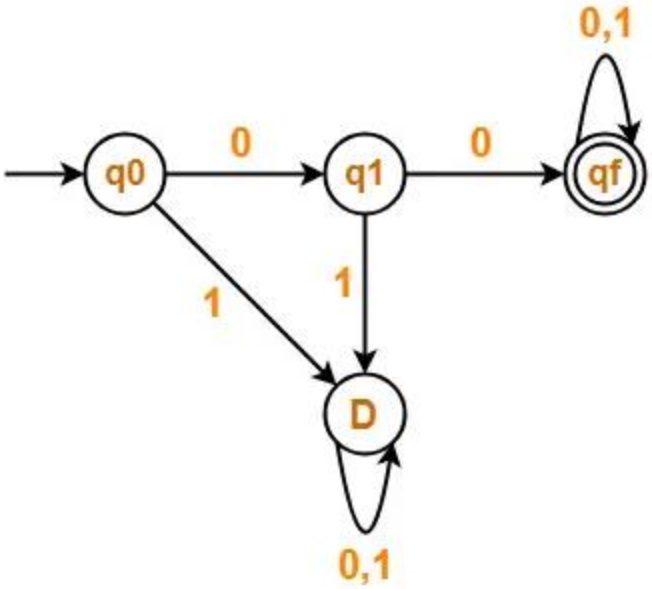
Problem-01:

Draw a DFA for the language accepting strings starting with ‘a’ over input alphabets ∑ = {a, b}
L = {a, ab, aa, abbbb, aaaa,ababab,abbbbbbbaa, abaaaaaaaaaa, aaa,……..}



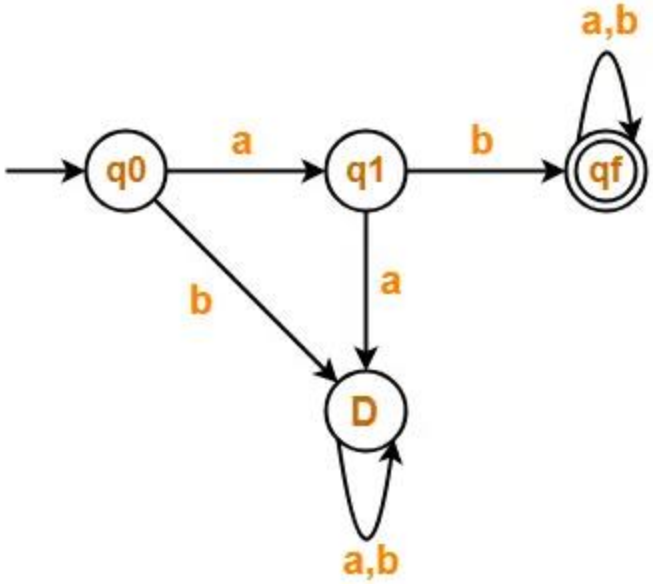
Problem-02:

Draw a DFA that accepts a language L over input alphabets ∑ = {0, 1} such that L is the set of all strings starting with ’00’.
L = {00, 001, 0000, 000000, 0011111,001010101,001111110,0000000000000}



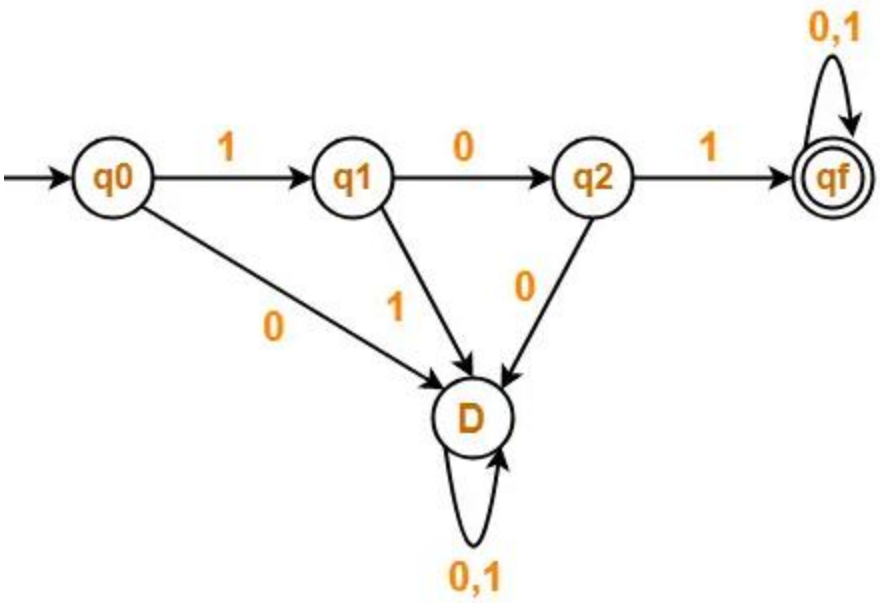
Problem-03:

Draw a DFA for the language accepting strings starting with ‘ab’ over input alphabets ∑ = {a, b}
L = {ab, aba,abb,abbbbbba, abababababababa,abbb,abbbba,abba,abbbabbabba……}



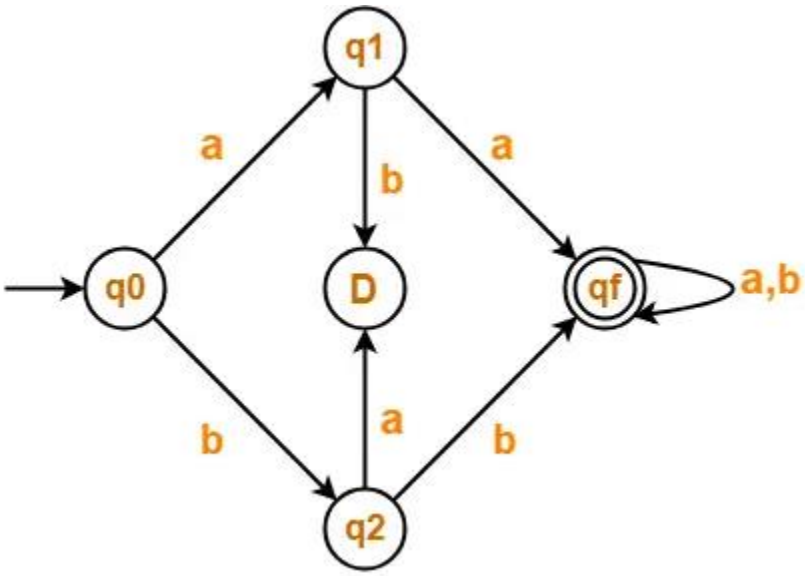
Problem-04:

Draw a DFA for the language accepting strings starting with ‘101’ over input alphabets ∑ = {0, 1}
L = {101, 1010, 1011, 10111011,101000,10101101, 101011……}



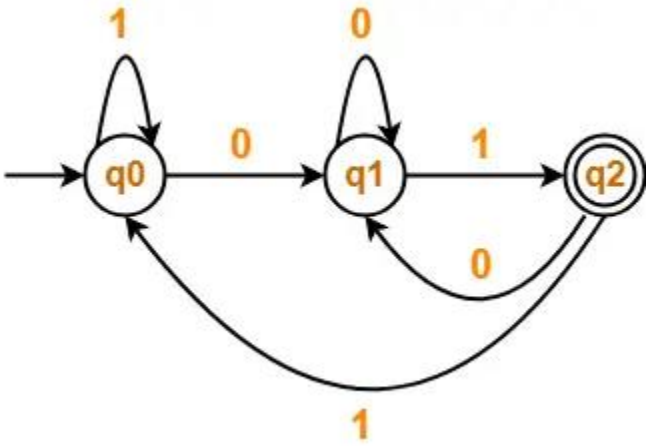
Problem-05:

Construct a DFA that accepts a language L over input alphabets ∑ = {a, b} such that L is the set of all strings starting with ‘aa’ or ‘bb’.



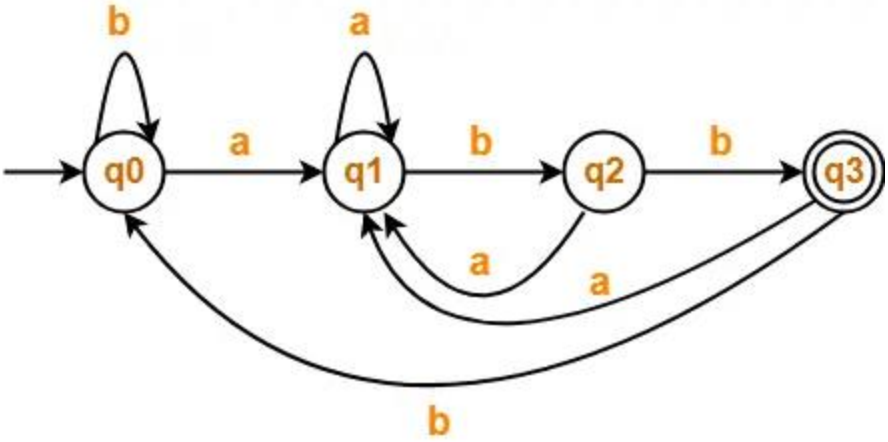
Problem-06:

Draw a DFA for the language accepting strings ending with ’01’ over input alphabets ∑ = {0, 1}



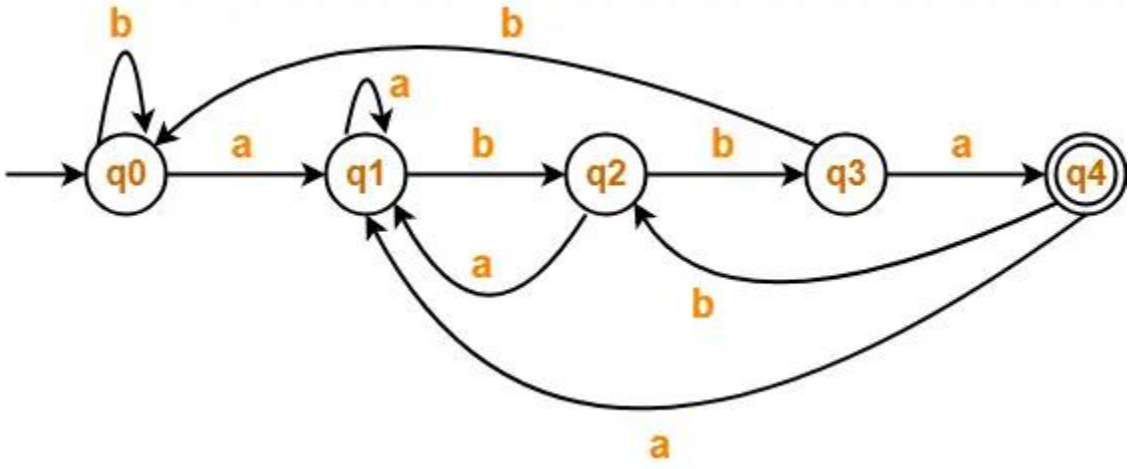
Problem-07:

Draw a DFA for the language accepting strings ending with ‘abb’ over input alphabets ∑ = {a, b}



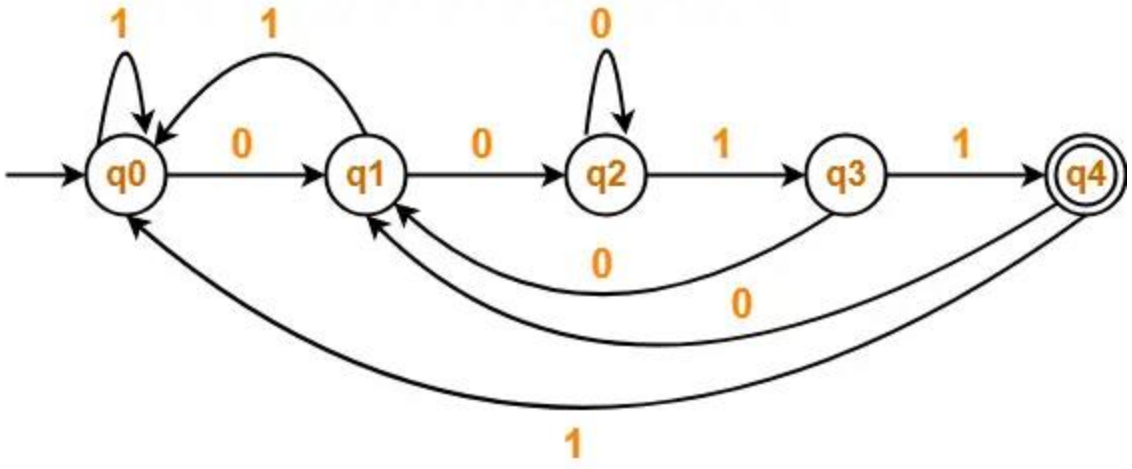
Problem-08:

Draw a DFA for the language accepting strings ending with ‘abba’ over input alphabets ∑ = {a, b}



Problem-09:

Draw a DFA for the language accepting strings ending with ‘0011’ over input alphabets ∑ = {0, 1}



Example 10:

Design FA with ∑ = {0, 1} accepts even number of 0's and even number of 1's.