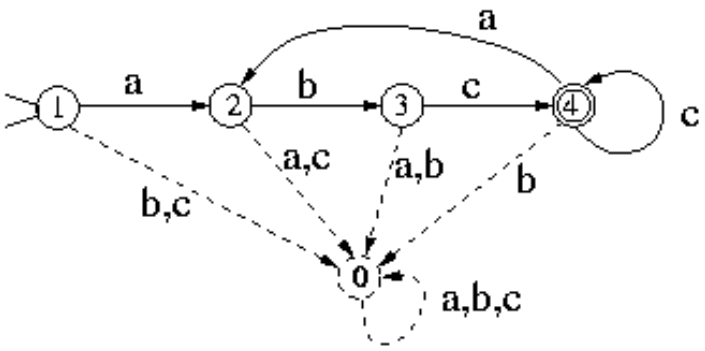
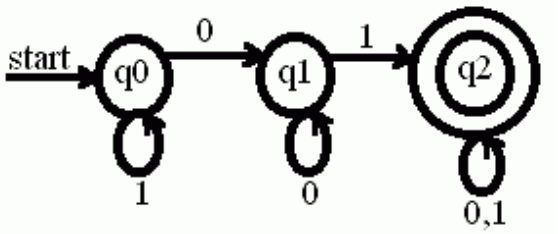
Prepared by: Trupti Kodinariya (AITS)

Example of Deterministic Finite Automata

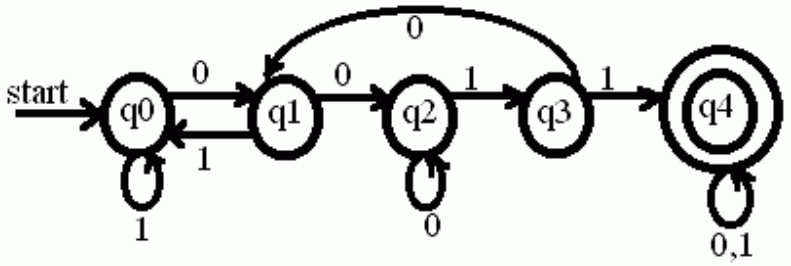
$(abc^{+})^{+}$



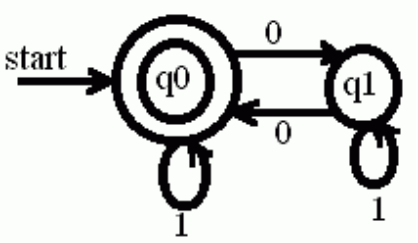
Construct a DFA to accept a string containing a zero followed by a one



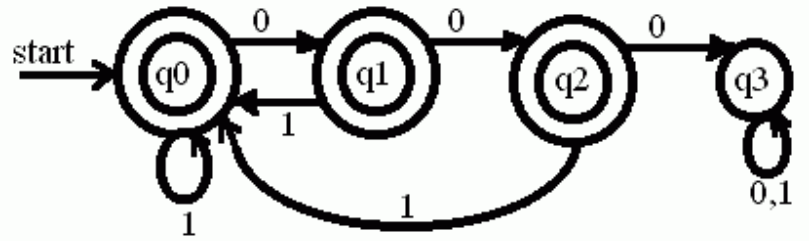
Construct a DFA to accept a string containing two consecutive zeroes followed by two consecutive ones



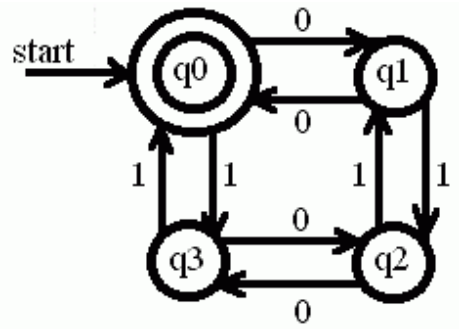
Construct a DFA to accept a string containing even number of zeroes and any number of ones



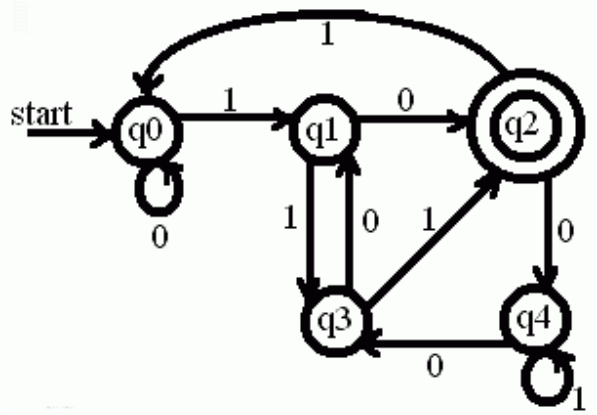
Construct a DFA to accept all strings which do not contain three consecutive zeroes



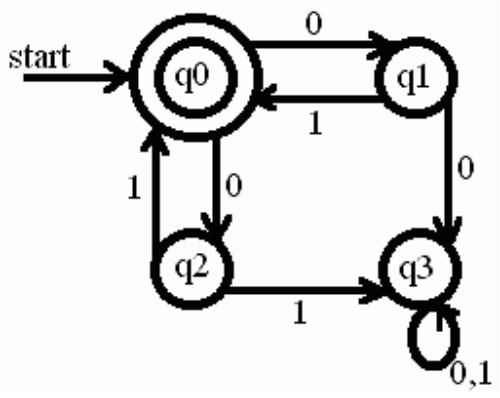
Construct a DFA to accept all strings containing even number of zeroes and even number of ones



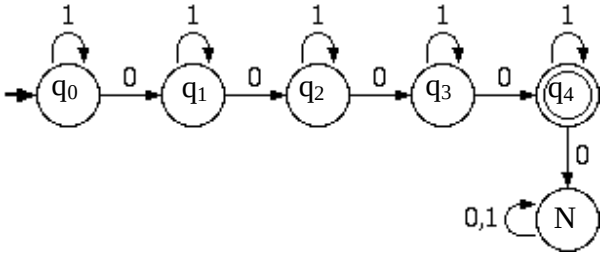
Construct a DFA to accept all strings which satisfies #(x) mod 5=2



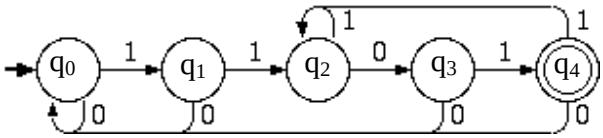
Construct a DFA to accept all strings (0+1)* with an equal number of 0's & 1's such that each prefix has at most one more zero than ones and at most one more one than zeroes



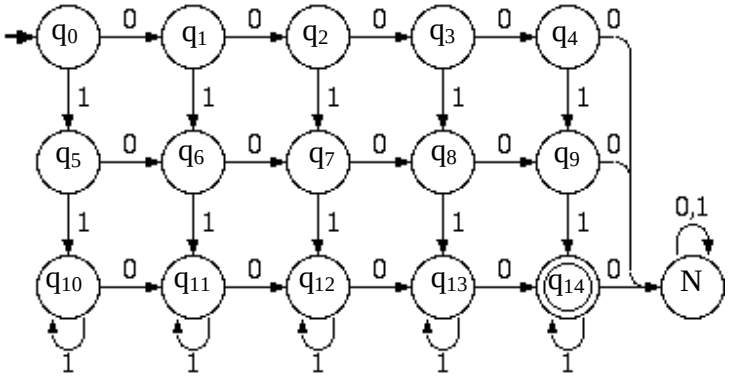
All strings that contain exactly 4 0s.



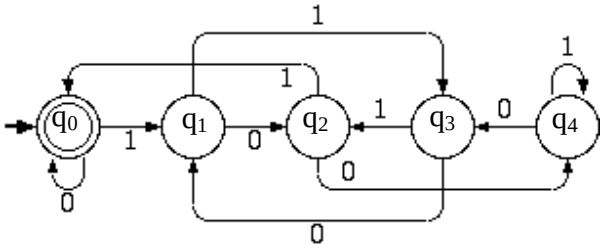
All strings ending in 1101.



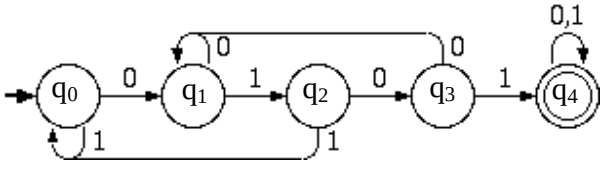
All strings containing exactly 4 0s and at least 2 1s.



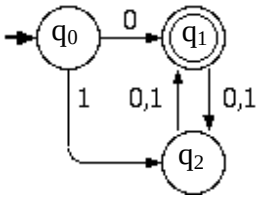
All strings whose binary interpretation is divisible by 5.



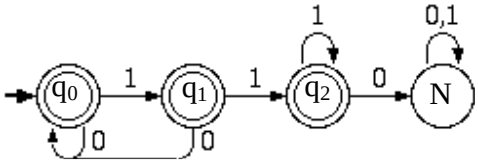
All strings that contain the substring 0101.



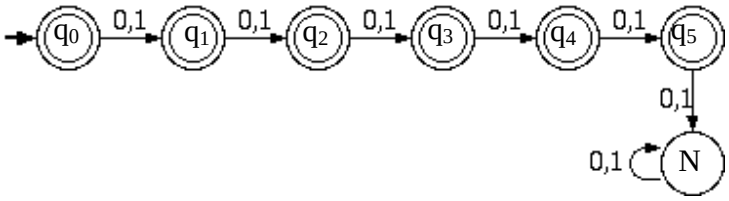
All strings that start with 0 and has odd length or start with 1 and has even length.



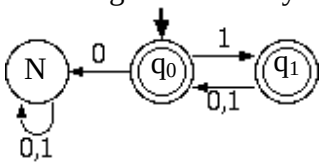
All strings that don't contain the substring 110.



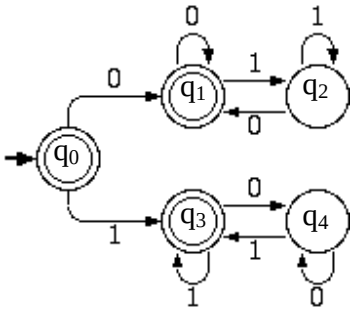
All strings of length at most 5.



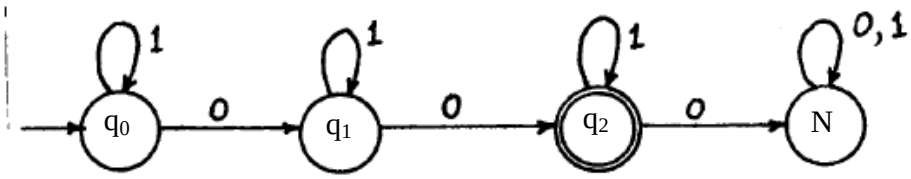
All strings where every odd position is a 1.



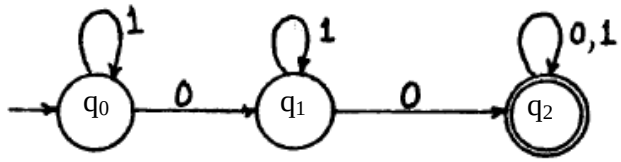
Let D = {w | w contains an equal number of occurrences of 01 and 10}



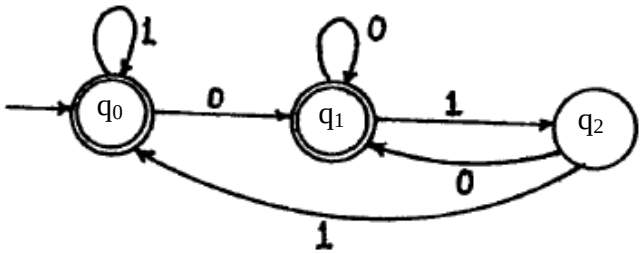
1*01*01*



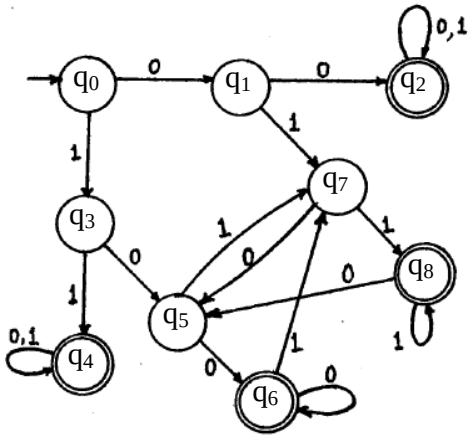
1*01*0(0+1)*



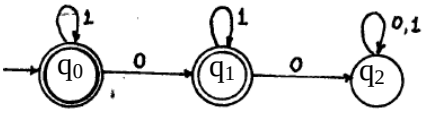
(0+1)*(00+11+10) + ^ + 0 + 1



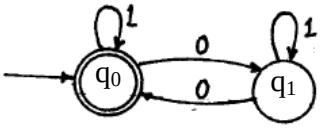
(00+11)(0+1)* + (0+1)*(00+11)



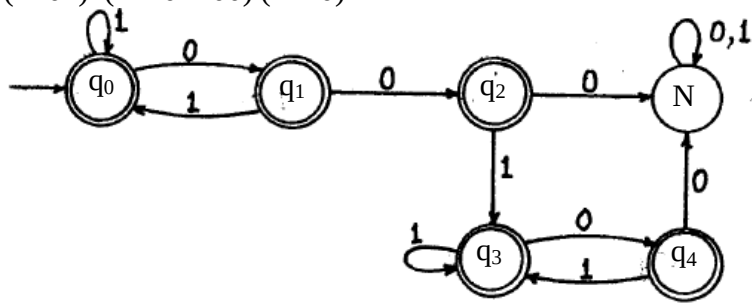
(1+01)*(0+^) or (0+^) (1+10)*



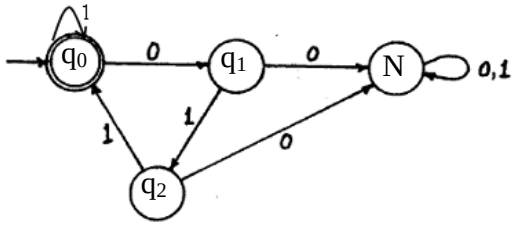
1*(01*01*)*



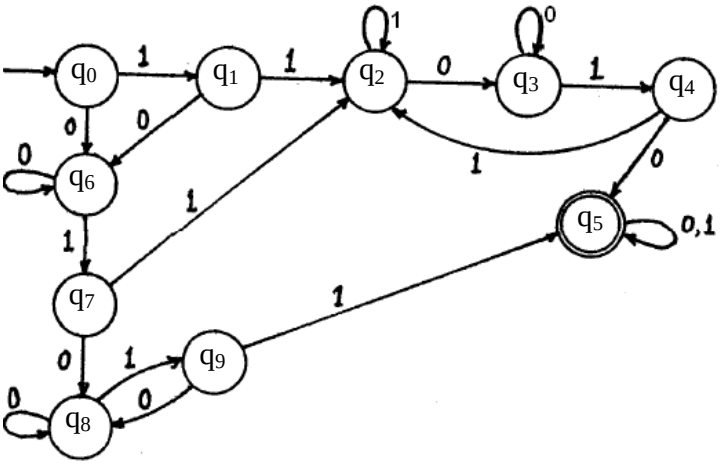
(1+01)*(^ + 0 + 00) (1+10)*



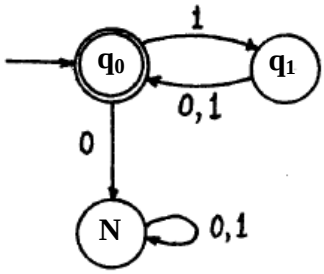
(1+011)*



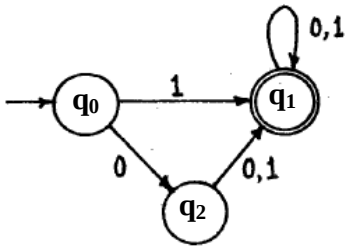
(0+1)* 11 (0+1)* 010 (0+1)* + (0+1)* 010 (0+1)* 11 (0+1)*



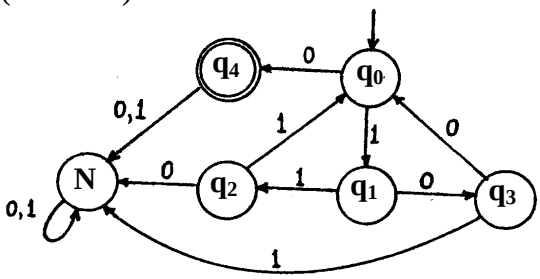
(10+11)*



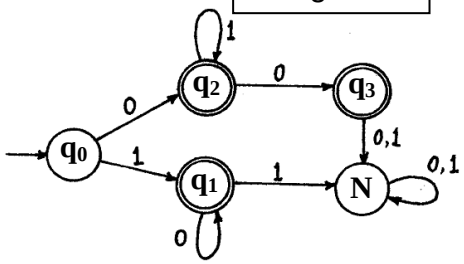
(0+1)*(1+00) (0+1)*



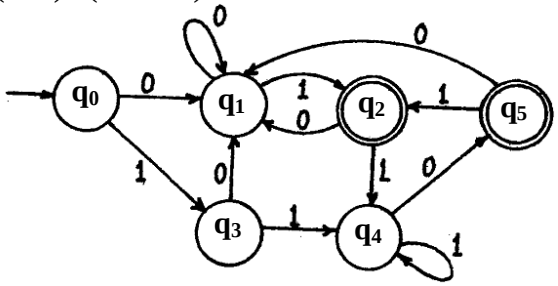
(111+100)*0



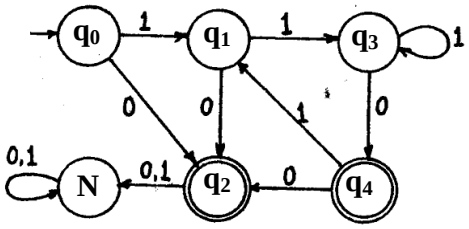
0 + 10* + 01*0 wrong



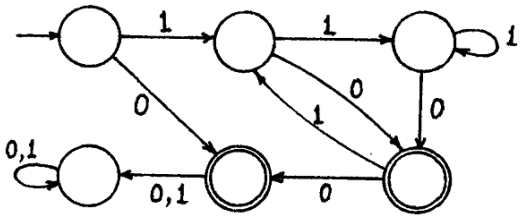
(0+1)* (01+110)



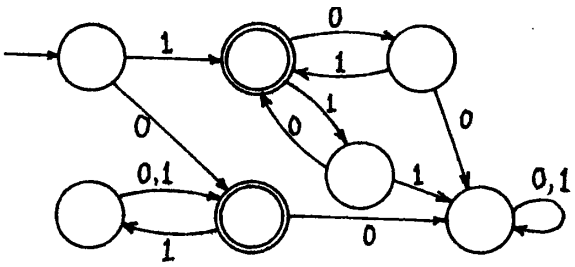
(1+110)*0



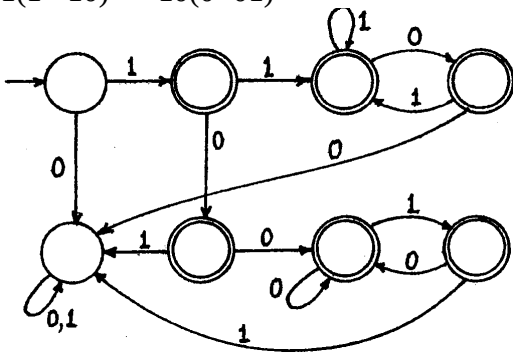
(1+10+110)*0



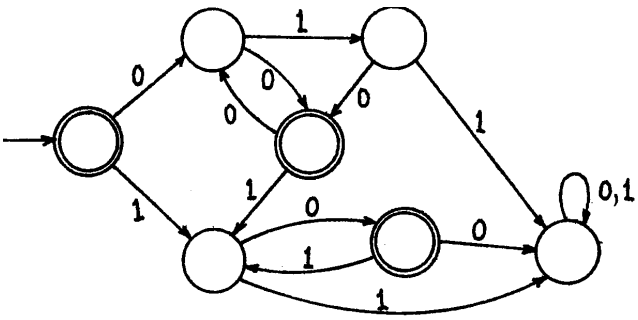
1(01+10)* + 0 (11+10)*



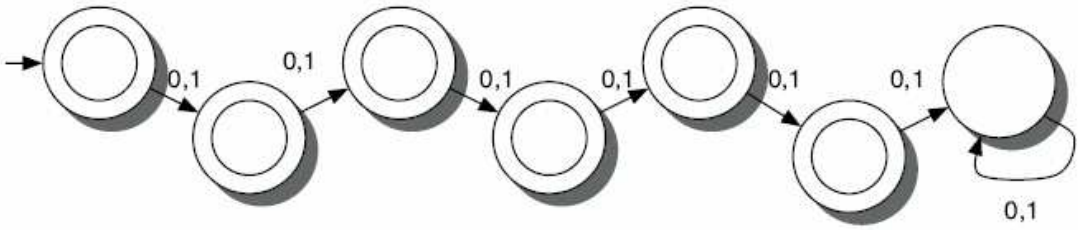
1(1+ 10)* + 10(0+01)*



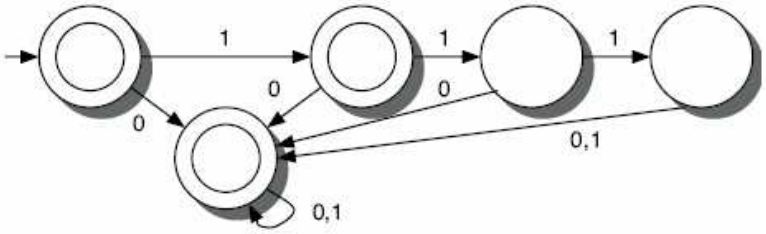
(010+00)* (10)*



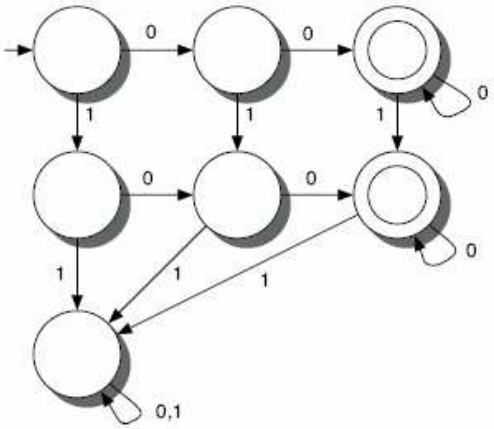
$\{w$: the length of w is at most 5$\}$



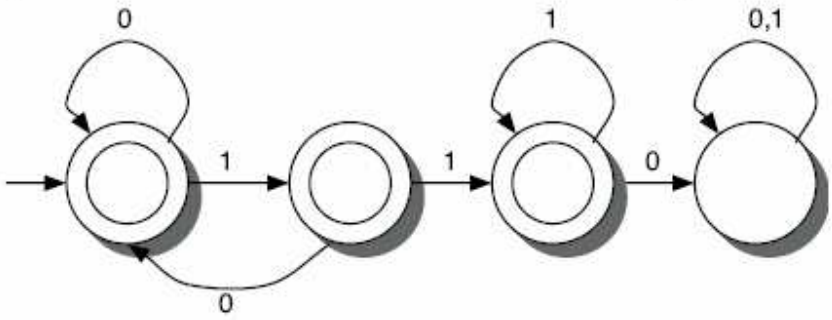
$\{w$: w is any string except 11 and 111$\}$



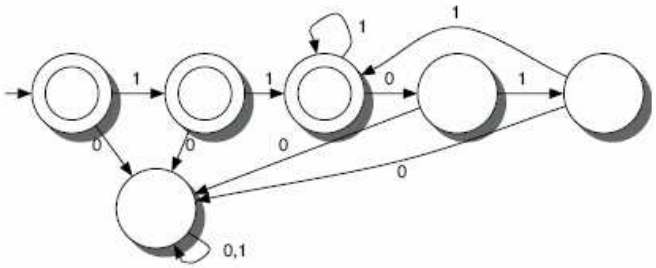
$\{w$: w contains at least two 0s and at most one 1$\}$



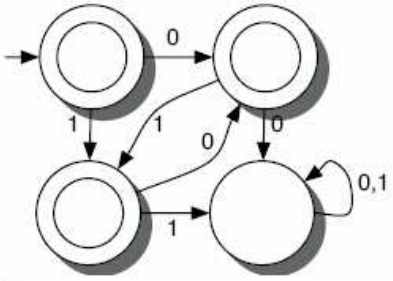
$\{w$: w does not contain the substring 110$\}$



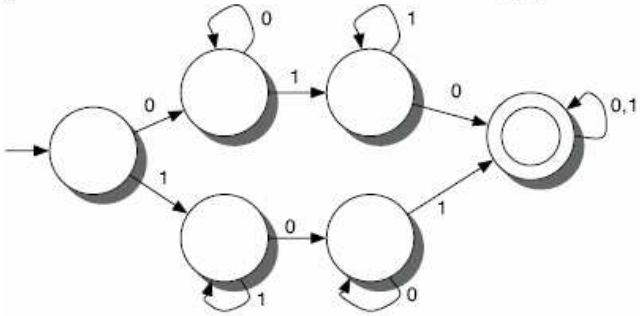
$\{w : \text{each 0 in } w \text{ is immediately preceded and immediately followed by 11}\}$



$\{w : w \text{ has neither 00 nor 11 as a substring}\}$



$\{w : w \text{ has both 01 and 10 as substrings}\}$



$\{w : w \text{ contains an equal number of occurances of the substrings 01 and 10}\}$