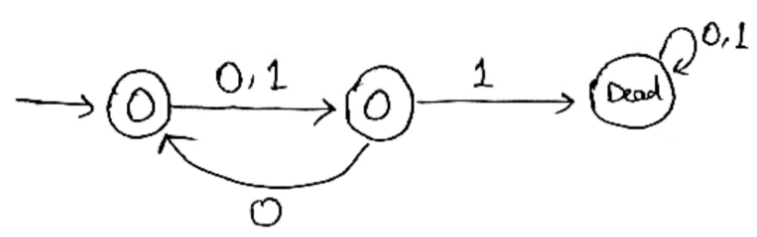


Section 8. MHB Sir

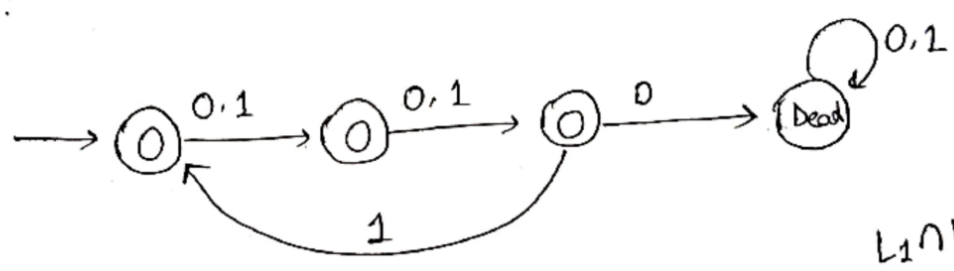
$L_1 = \{w : \text{every second letter of } w \text{ is } 0\}$

$L_2 = \{w : \text{every third letter of } w \text{ is } 1\}$

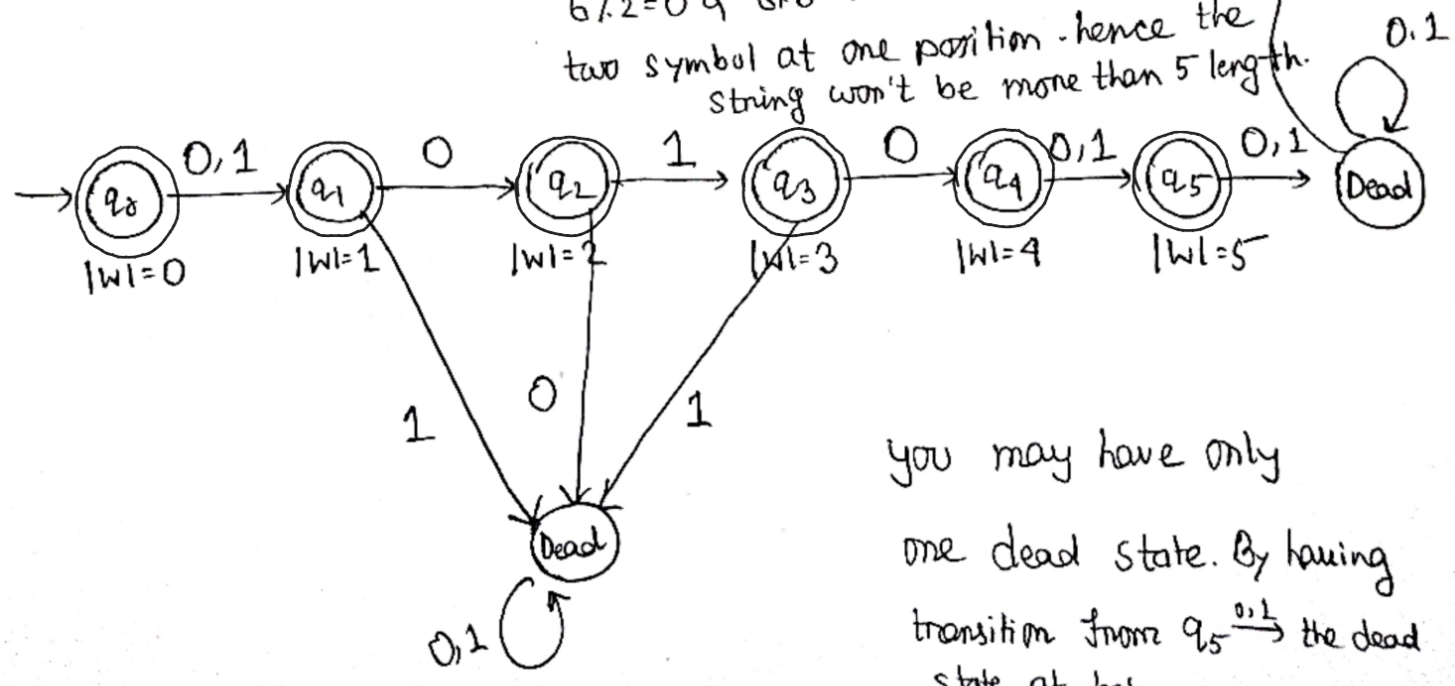
b) DFA for L_1 :



c) DFA for L_2 :



d) DFA for $L_1 \cap L_2$:



at the sixth position \rightarrow we should have 0 and 1 both. Because $6 \div 2 = 0$ & $6 \div 3 = 0$. However, we can't have two symbol at one position. hence the string won't be more than 5 length.

you may have only one dead state. By having transition from $q_5 \xrightarrow{0,1}$ the dead state at below.