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SECTION - U
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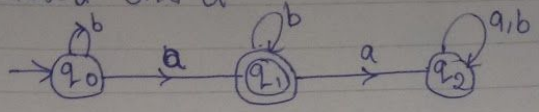
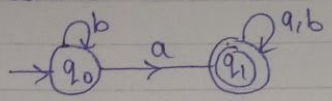
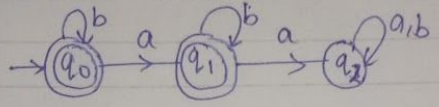
Q-1 ⇒ exactly one 'a' $\Sigma = \{a, b\}$



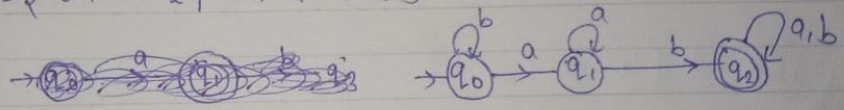
Q-2 ⇒ atleast one 'a'



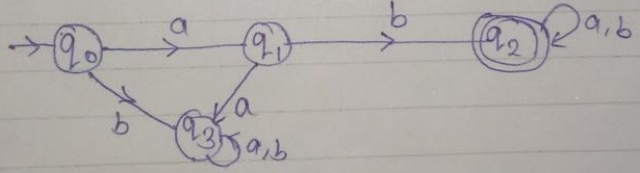
Q-3 ⇒ at most one 'a'



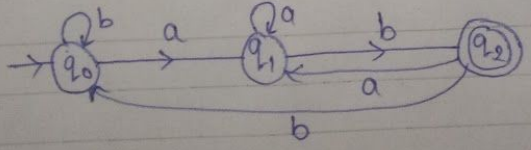
Q-4 ⇒ $L = \{ w_1 ab w_2 \mid w_1, w_2 \in (a,b)^* \}$



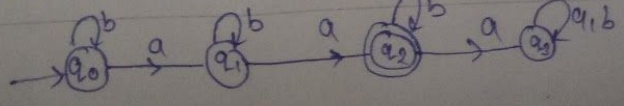
Q=5 ⇒ Starting with 'ab'



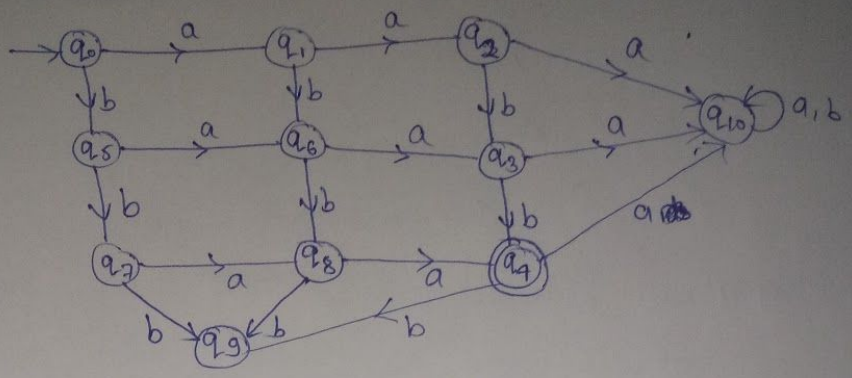
Q=6 ⇒ ending with 'ab'



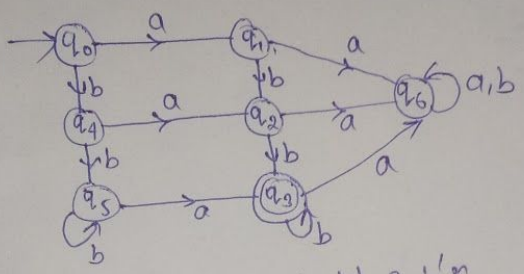
Q=7 ⇒ exactly 2 a's



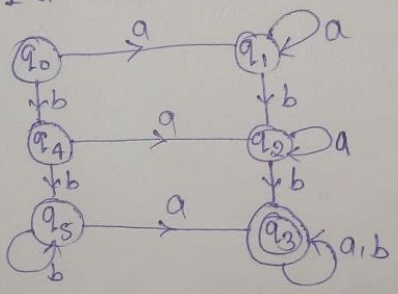
Q = 8 ⇒ exactly 2 a's and exactly 2 b's



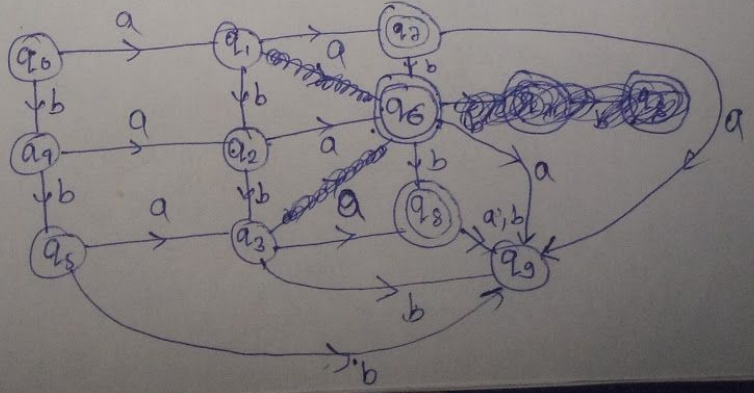
Q = 9 ⇒ exactly 1 a' and atleast 2 b's



Q-10 ⇒ atleast 1 a and atleast 2 b's



Q = 11 ⇒ exactly 2 a's and atmost 2 b's



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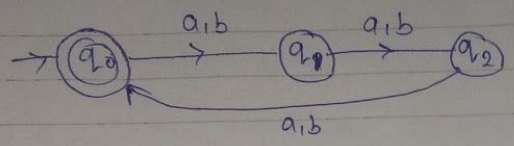
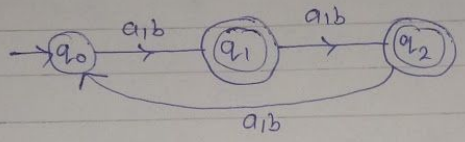
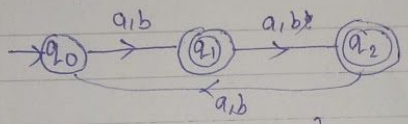
Q=12 ⇒ $L = \{ w \mid |w| \bmod 2 = 0 \}$



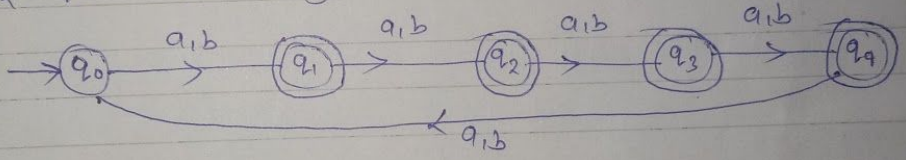
Q=13 ⇒ $L = \{ w \mid |w| \bmod 3 > 0 \}$



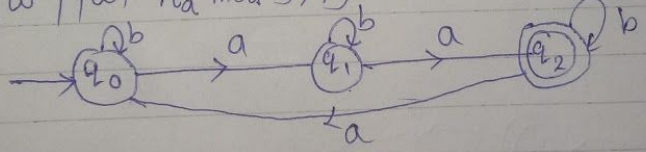
Q=14 ⇒ $L = \{ w \mid |w| \bmod 3 \neq 0 \}$



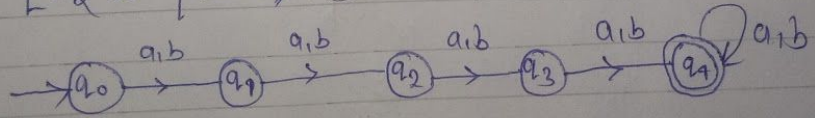
Q=15 ⇒ $L = \{ w \mid |w| \bmod 5 \neq 0 \}$



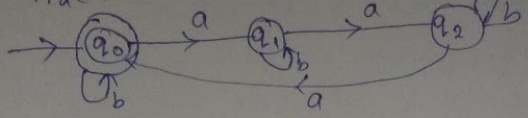
Q=16 ⇒ $L = \{ w \mid |w|_a \bmod 3 > 1 \}$



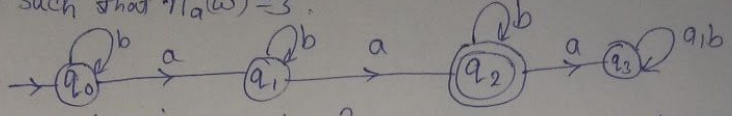
Q=17 ⇒ $L = \{ w \mid |w| \geq 4 \}$



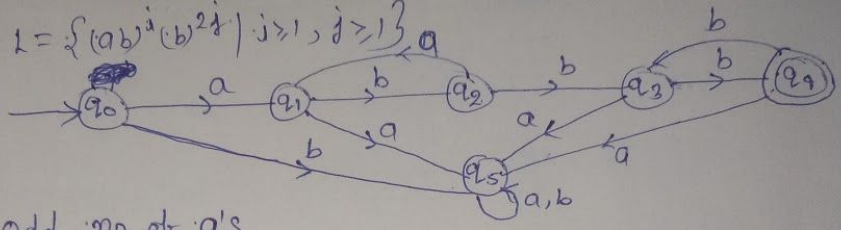
Q = 18 ⇒ $n_a(w)$ is divisible by 3.



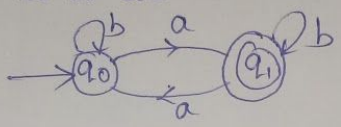
Q ⇒ 19 ⇒ w such that $n_a(w) = 3$.



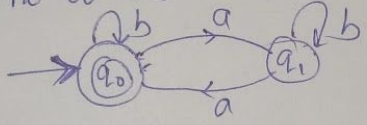
Q ⇒ 20 ⇒ $L = \{(ab)^i (b)^{2j} \mid i \geq 1, j \geq 1\}$



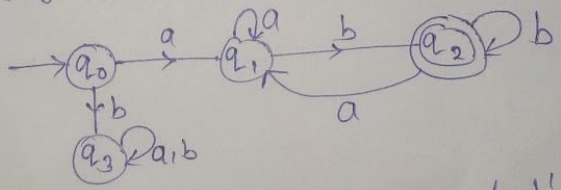
Q ⇒ 21 ⇒ Odd no of a's



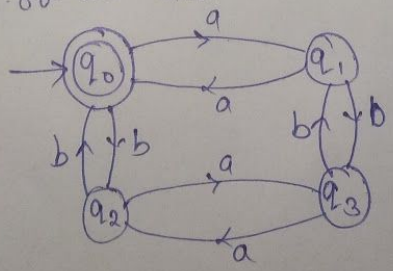
Q = 22 ⇒ Even no of a's



Q = 23 ⇒ Starting with a and ending with b



Q ⇒ 24 ⇒ Even no of a's and even no of b's



b

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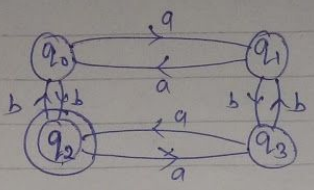
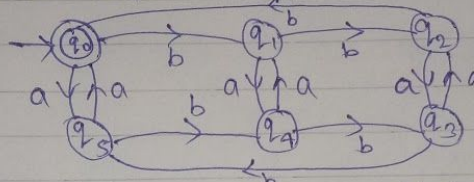
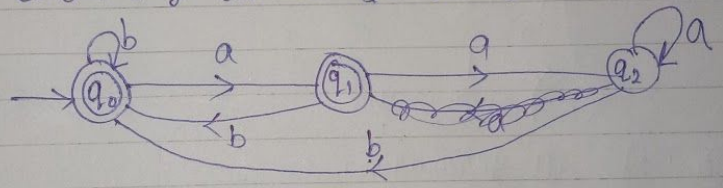
Q ⇒ 25 ⇒ Even no. of a's and odd no of b's



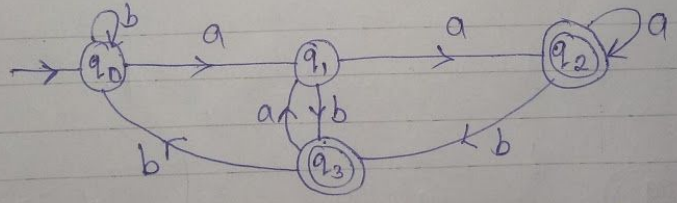
Q = 26 ⇒ Even no of a's and no of b's is divisible by 3



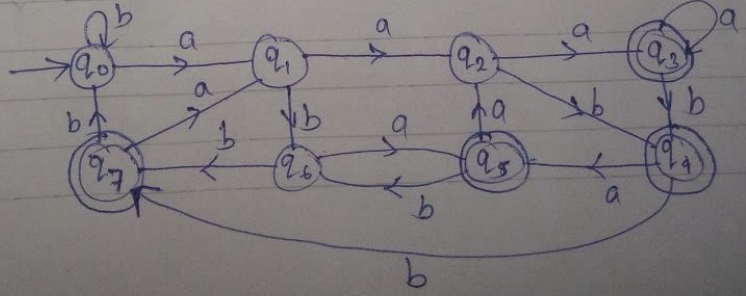
Q ⇒ 27 ⇒ Not containing 'aa' as substring.



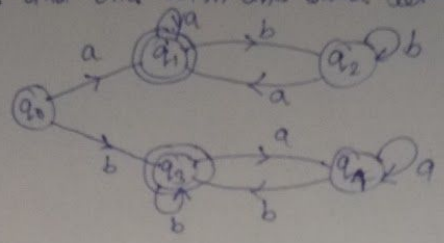
Q = 28 ⇒ L = {w | 2nd last symbol must be 'a'}



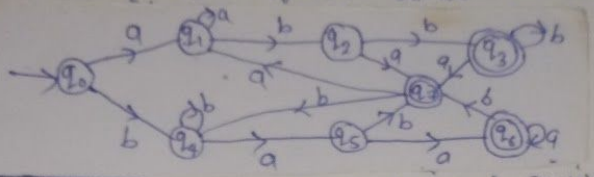
Q ⇒ 29 ⇒ L = {w | 3rd last symbol must be 'a'}



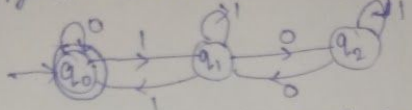
Q=30⇒ begien and end with the same letter.



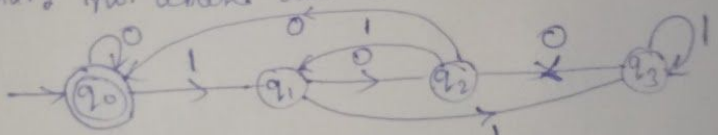
Q=31⇒ L={w| second last symbol should be different from first symbol}



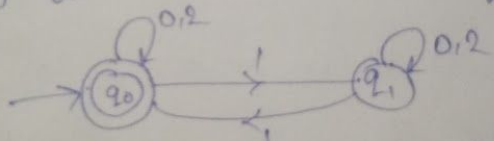
Q=32⇒ All binary no. whose decimal equivalent is divisible by 3.



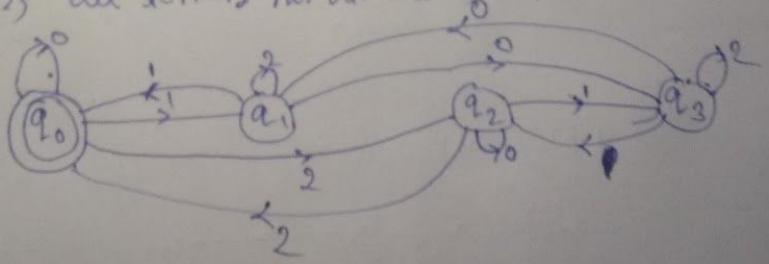
Q=33⇒ All binary no. whose decimal equivalent is divisible by 4.



Q=34⇒ Σ={0,1,2} all ternary no. divisible by 2.



Q=35⇒ Σ={0,1,2} all ternary no. divisible by 4.



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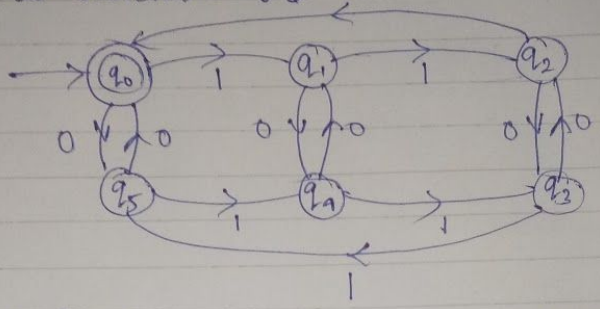
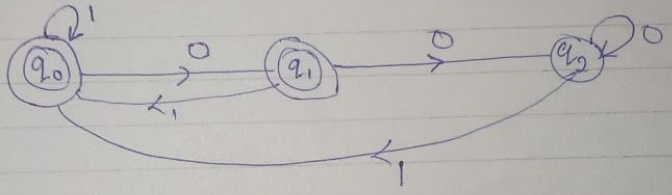
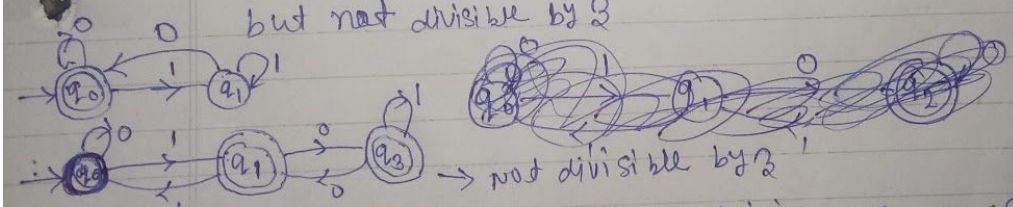
Q=36 ⇒ $\Sigma = \{0,1\}$ desine dfa for accepting all those string in which no. of 0's is divisible by 2 and no. of 1's is divisible by 3.



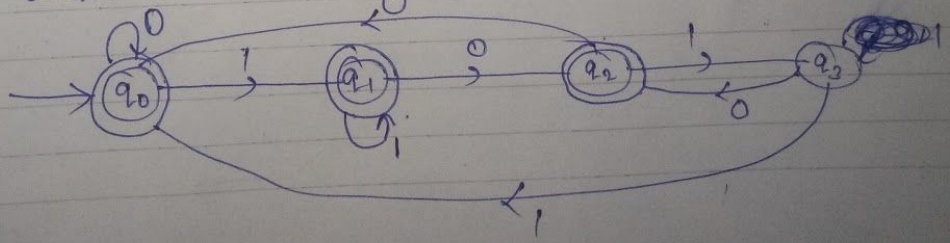
Q=37 ⇒ $\Sigma = \{0,1\}$ dfa for all string not containing 00



Q⇒38⇒ $\Sigma = \{0,1\}$ desine a dfa that will accepts all those binary no. whose decimal equivalent is divisible by 2 but not divisible by 3

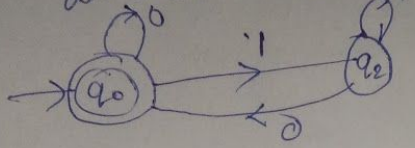


Q=39 All those string not containing 101 as substring



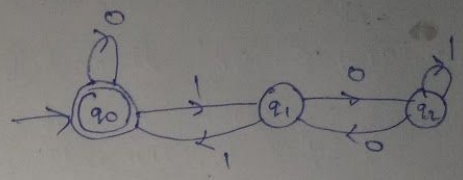
Q=40 $\Sigma = \{0, 1\}$ desine a dfa to accept all those binary no. whose decimal equivalent is divisible by 2 or 3.

divisible by 2.



divisible by 2

OR



divisible by 3