INT201 Decision, Computation and Language

Tutorial 2 – DFA

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1. Design a vending machine (DFA) that:

- accepts $\$1$ and $\$2$ coins
- refunds all money if more than $\$4$ is added
- is ready to deliver if exactly $\$4$ has been added

2. Design a DFA with $\Sigma = \{0, 1\}$ accepts those string that starts with 1 and ends with 0.

3. Given a language $A=\{aw_1 aaw_2 a: w_1, w_2 \in \{a, b\}^*\}$, design a DFA that accepts L.

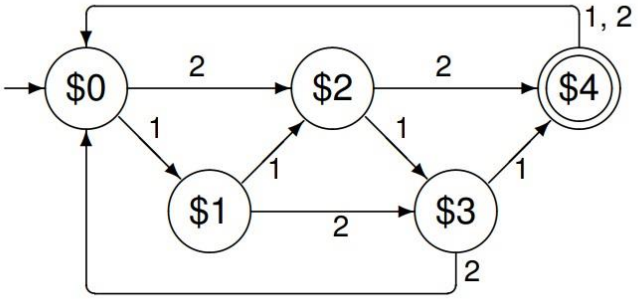
4. Define the language A as:

$$A = \{w : w \text{ is a binary string containing } 101 \text{ as a substring}\}$$

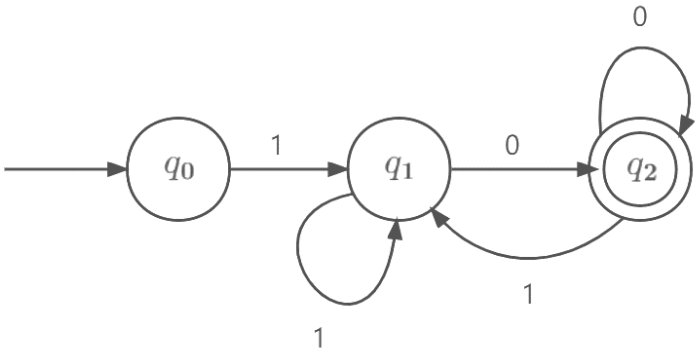
Design the DFA M that $A = L(M)$.

Solutions

1.

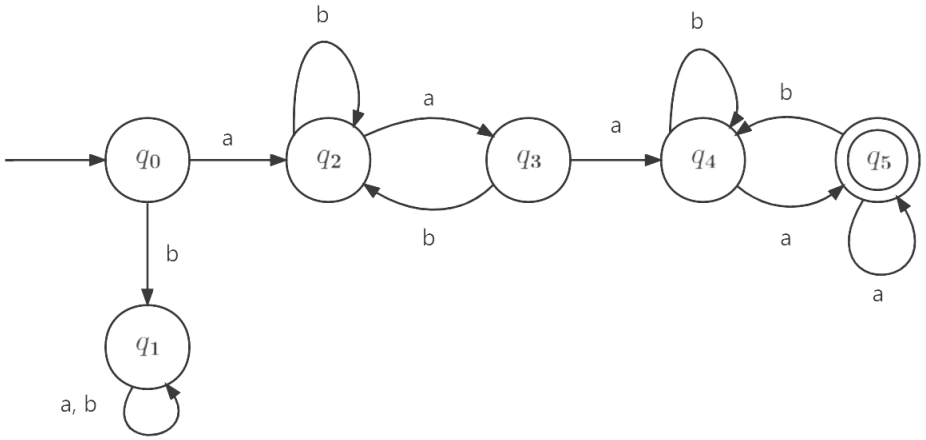


2.

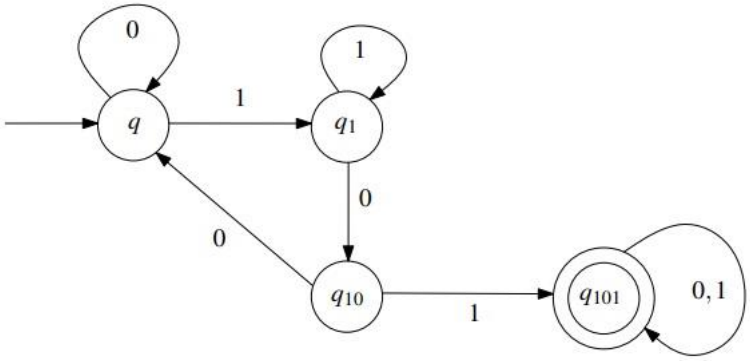


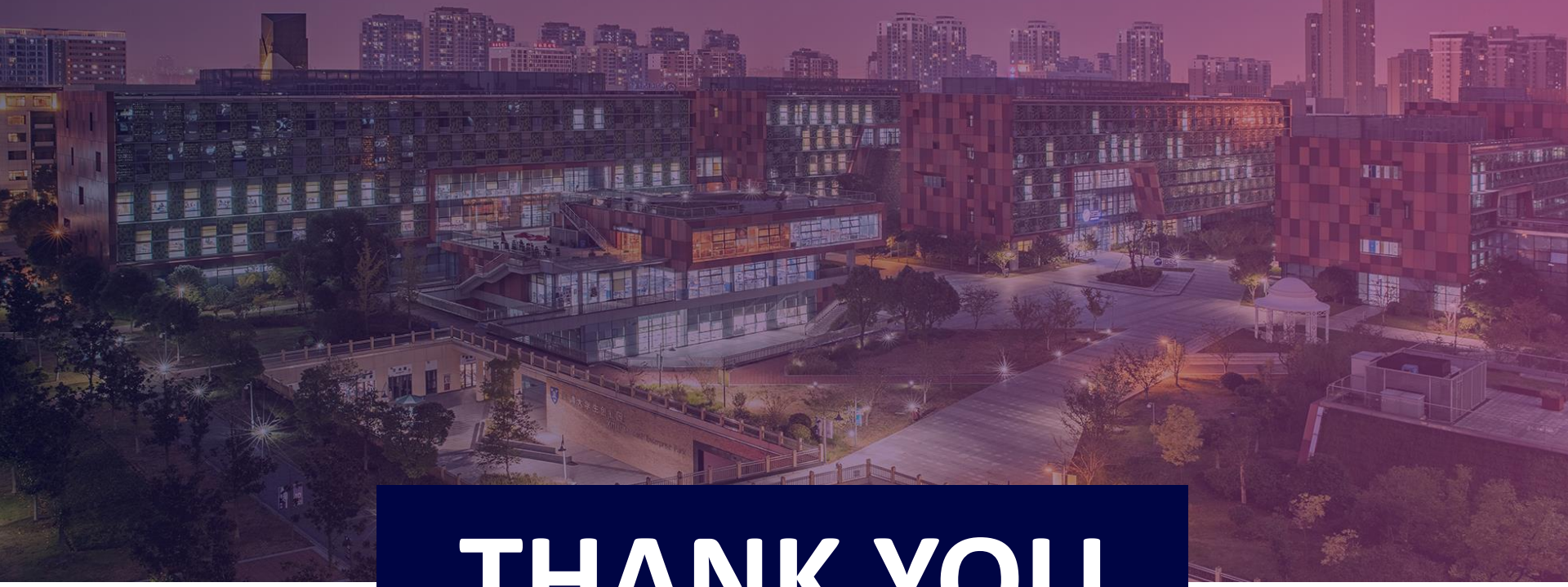
Solutions

3. q_1 can be removed



4.





THANK YOU

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