Logic and Computation I, Autumn 2022

Homework No.1
Due Date: November 1, 11:59 pm (Beijing)

Problem 1
For any string w, the reverse of w is written as w^R, e.g., $w = w_1 w_2 \cdots w_n$ and $w^R = w_n \cdots w_2 w_1$.
The following statement is true or not.
If L is regular, so is $L^R = \{w^R : w \in L\}$.

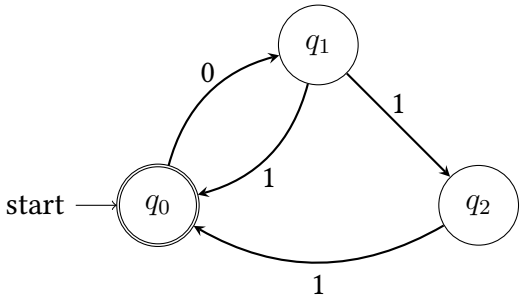
Solution:

Problem 2
Prove that the class of regular languages is closed under $\cap$.

Solution:

Problem 3

1. Does the following NFA $\mathcal{N} = (Q, \Omega, \delta, Q_0, F)$ accept $L = (01 + 011)^*$?
2. Construct a DFA $\mathcal{M}$ such that $L(\mathcal{M}) = L$.



Solution: