COMP170 Spring 2018, HW 7

Due Tuesday Mar. 13th, 9:00am

Submit via: Gradescope

Please limit each solution to one page whenever possible. You are allowed to consult your textbook and class notes for guidance, but you are not allowed to cruise the internet at large for solutions.

Problem 1

Is the following language regular? Prove your answer. Σ = \{0, 1\}

\[ L = \{w \mid w \text{ has an equal number of 01 and 10 substrings}\} \]

Problem 2

Is the following language regular? Prove your answer. Σ = \{a, b, c, d\}

\[ L = \{a^mb^n c^q d^r \mid m + n = r + q\} \]

Problem 3

Convert the following NFA into an equivalent DFA. Please submit your solution to the Gradescope autograder as P3.txt, using the FSA syntax that was provided in HW6.