CS345/541 **Assignment 5 (partial)** Fall 2023
MA345

Given: Wed, Oct 11

Due: Fri, Oct 20, 9:00 a.m.

1. Give a regular expression for each of the following languages. In each case, the alphabet is {0, 1}.

   (a) The language of strings that begin with 00 and end in 11.

   (b) The language of strings of length at least three that have a 1 three positions from the end.

   (c) The language of strings of even length that start with a 0.

2. Convert the regular expression $((0 \cup 1)1)^*$ into an NFA. Use the algorithm we learned in class. Don't take any shortcuts.

3. Convert the following NFA into an equivalent regular expression. Use the algorithm we learned in class. Draw the automaton after adding a new accepting state and after removing any state.