1. NFAs
   (a) What language does the following NFA accept?

   \[ \begin{array}{c}
   q_0 \\
   \varepsilon \\
   0 \\
   2 \\
   \end{array} \quad \begin{array}{c}
   q_1 \\
   \varepsilon \\
   1 \\
   0 \\
   \end{array} \quad \begin{array}{c}
   q_2 \\
   \varepsilon \\
   0 \\
   2 \\
   \end{array} \quad \begin{array}{c}
   q_3 \\
   0 \\
   \varepsilon \\
   2 \\
   \end{array} \]

   (b) Create an NFA for the language “all binary strings that have a 1 as one of the last three digits”.

2. DFAs & Minimization
   (a) Convert the NFA from 1a to a DFA, then minimize it.

   (b) Minimize the following DFA:
3. RegExp to NFA

Use our generic construction to build an NFA that recognizes the language given by the following regular expression: $((0 \cup 1)^{*}001$. If you have time, also give as small an NFA as you can. (Unlike with DFAs there is no good minimization algorithm known for NFAs.)