Homework 2

1. Write regular expressions to capture the following regular languages:

   (a) The set of binary strings which have a 1 in every even position. (Note: odd positions may be either 0 or 1.)

   (b) The set of binary strings that do not contain 011 as a substring.

   (c) Comments in Pascal. These are delimited by (* and *) or by { and }, and can contain anything in between; they are NOT allowed to nest, however.

2. Write a DFA or NFA to recognize the languages described in each part of problem 1.

3. (a) Show the NFA that results from applying the standard construction we saw in class (or you can find in the book in Figure 2.7) to the regular expression \texttt{letter(letter|digit)*}.

   (b) Convert your NFA to a DFA (see Example 2.14 in the book).