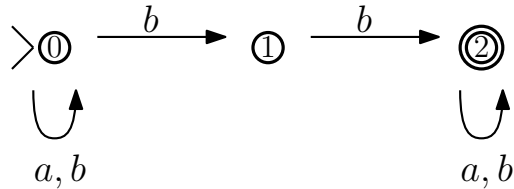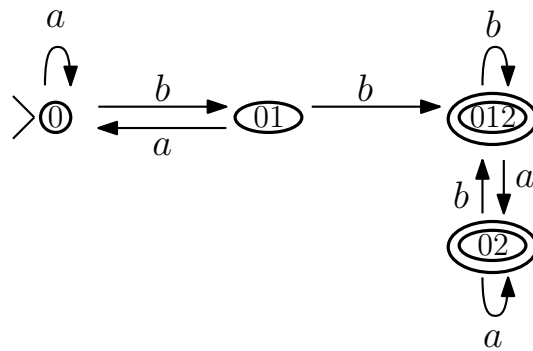# COSC 341 – Tutorial 6 (Solution)

1. Construct an NFA on the alphabet $\{a, b\}$ that accepts the language of all words containing the substring bb. Construct a DFA that is equivalent to M.
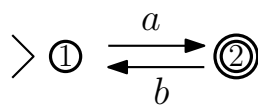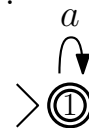
   NFA:

   DFA:

2. Build an NFA on the alphabet $\{a, b\}$ that accepts the language $L_1 = \{a, aba, ababa, abababa, \dots\}$ and one that accepts the language L_2 of all words that do not contain b's. Use λ-transitions to combine them into an NFA accepting L_1 and L_2. Convert that NFA to an equivalent DFA.
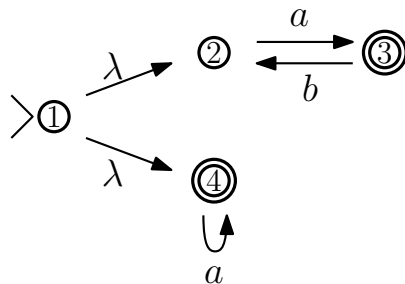
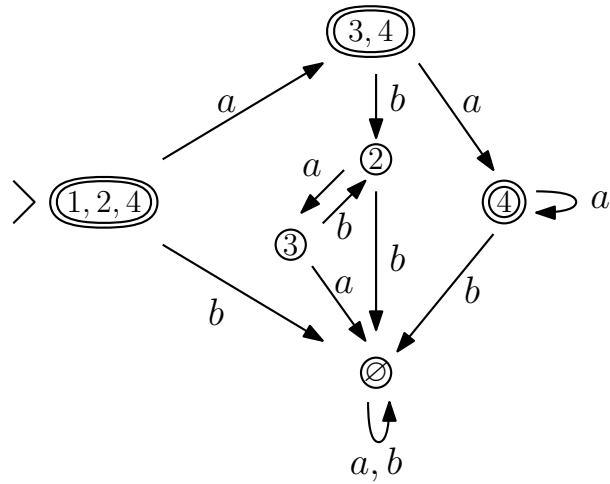 $L_1:$ $L_2:$
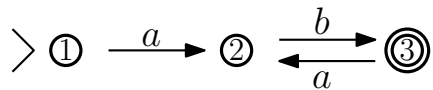

   NFA for both languages:
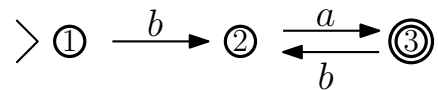

DFA equivalent to that NFA:

Homework

1. Build an NFA that accepts the language $L_1 = \{ab, abab, ababab, abababab, \dots\}$ and one that accepts the language $L_2 = \{ba, baba, bababa, babababa, \dots\}$. Use λ-transitions to combine them into an NFA accepting L_1 and L_2. Convert that NFA to an equivalent DFA.
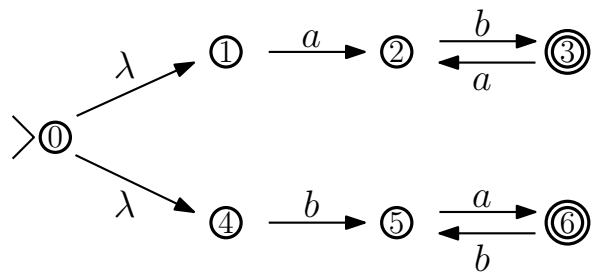
$L_1:$

$L_2:$

NFA for both languages:

DFA equivalent to that NFA: