

COSC 341 – Tutorial 8/9

1. Are the following languages automatic languages? If so, construct an NFA for that language. If not, prove that the language is not automatic.
 - (a) $L = \{w \mid w \text{ is a palindrome over } \{a, b\}\}$
 - (b) $L = \{a^n b^m \mid n, m \in \mathbb{N}\}$
 - (c) $L = \{a^n b^m \mid n < m\}$
 - (d) $L = \{ww \mid w \in \{a, b\}^*\}$

Homework

1. Are the following languages automatic languages? If so, construct an NFA for that language. If not, prove that the language is not automatic.
 - (a) $L = \{w \mid w \text{ has twice as many } a\text{'s as } b\text{'s}\}$
 - (b) $L = \{w \mid w \in \{a, b\}^*, \text{ the total number of } a\text{'s and } b\text{'s is odd}\}$