Automata Exercises

Tasks for 16.12.2014

Task 1 Construct a PDA for the language

$$L = \{ww^R \mid w \in \{0,1\}^*\}.$$

Task 2 Construct a PDA for the language

$$L = \{w \in \{a,b\}^* \mid \#_b(w) = 2\#_a(w)\}$$

directly and by first making a grammar. Can you make a DPDA? If yes, make one; if not explain why.

Task 3 Construct a PDA for the language

$$L = \{uwu^R \in \{a,b\}^* \mid \#_a(w) = \#_b(w)\}$$

directly and by first making a grammar. Can you make a DPDA? If yes, make one; if not explain why.

Task 4 Construct a grammar and a DPDA for the language

$$L = \{wcucw^R \mid w, u \in \{a,b\}^*\}.$$

Task 5 Construct a DPDA for

$$L = \{w \in \{a,b\}^* \mid \#_{aa}(w) \neq \#_{ab}(w)\}.$$

Task 6 Construct a DPDA for the language

$$L = \{a^i b^j c^k \mid i + k \neq j\}.$$