Formal Language and Automata Theory (CS21004)

Tutorial - VII

Class: CSE 2nd Year   *Date*: 8th March, 2010

Exercise 1. Deasign a DPDA that accepts strings of the form $1^* 0^n 1^n$, where $n \geqslant 1$. The acceptance is

    a) by empty stack,

    b) by final state.

Exercise 2. Design a PDA that accepts strings of the form $0^n 1^n$ or $0^n 1^{2n}$, where $n \geqslant 0$.

Exercise 3. Consider the following PDA and formally construct the equivalent CFG.
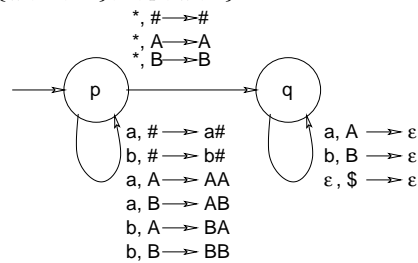$M = (\{p, q\}, \{a, b, *\}, \{\#, A, B\}, \delta, p, \#, \emptyset)$:

Figure 1.

Exercise 4. Design a PDA for the language $L_4 = \{0^m 1^n : 0 \leqslant m \leqslant n \leqslant 2m\}$.

Exercise 5. Design a PDA for the language $L_5 = \{x \in \{0,1\}^\star : x \text{ is not of the form } ww\}$.