npda examples2

Tuesday, November 5, 2024 12:02 PM

npda : $M = (Q, \Sigma, \Gamma, \delta, q_0, z, F)$

$\delta: (q_i, a, b) = (q_j, x) \qquad x \in \Gamma^*$

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create a npda (pda) for L:

$L_1 = \{a^n b^{n+1} : n \geq 0\} = \{b, abb, aabbb, \ldots\}$

algorithm :
- push extra 'a' first
- push 'a' from input stream
- match 'b' w/ 'a' - pop 'a'.
- input stream empty (done) + stack start symbol on top of stack go to final.

$M = (\ \ldots\ )$

$L_2 = \{a^{2n} b^n : n \geq 1\}$

$L_3 = \{a^n b^{n+1} : n \geq 1\}$

$L_4 = \{n_a(w) = 2 n_b(w) : w \in \{a, b\}^*\}$