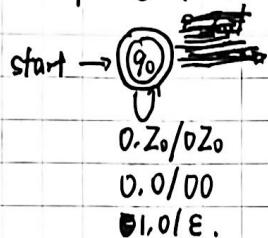


Week 7: By Deng Yufan.

Prob1. Design PDA.

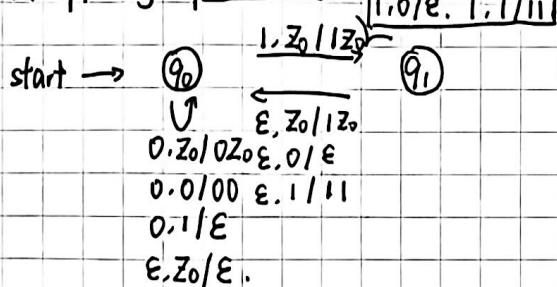
$$a. \{ w \in \{0,1\}^* \mid \forall x, \exists y = w, \#0(x) \geq \#1(x) \}.$$

Accept by final state.



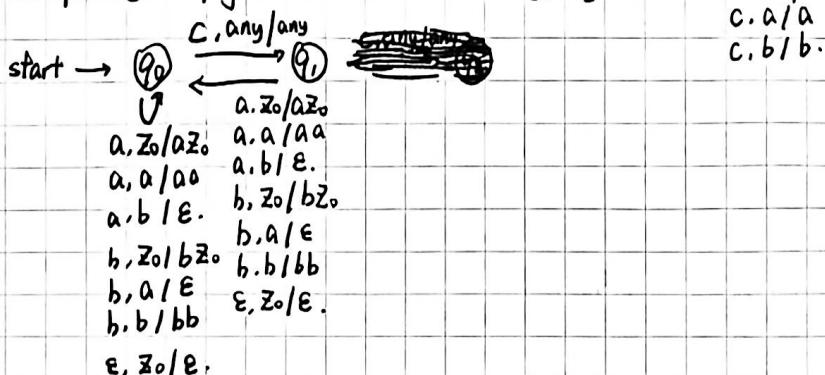
$$b. \{ w \in \{0,1\}^* \mid \#0(w) = 2 \#1(w) \}.$$

Accept by ~~final state~~ empty stack.



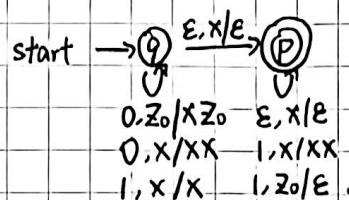
$$c. \{ w \in \{a,b,c\}^* \mid \#a(w) = \#b(w), c \notin w \}.$$

Accept by empty stack. where c.any/any means $c, Z_0/Z_0$.

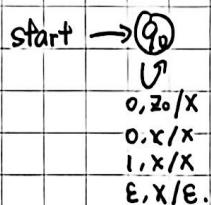


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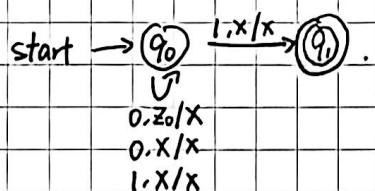
Prob 2. Consider PDA P.



a. Construct P_1 st. $N(P_1) = L(P)$.



b. Construct P_2 st. $L(P_2) = N(P)$.



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