Push Down Automata

$\#_a(w) =$ number of a's in w.

$L = \{w : \#_a(w) = \#_b(w)\}$.

PDA: $(\{q_0, q_1\}, \{a, b\}, \{a, b, Z_0\}, \delta, q_0, Z_0, \{q_1\})$.

$\delta(q_0, a, Z_0) = (q_0, aZ_0)$
$\delta(q_0, b, Z_0) = (q_0, bZ_0)$
$\delta(q_0, a, b) = (q_0, \epsilon)$
$\delta(q_0, a, a) = (q_0, aa)$
$\delta(q_0, b, a) = (q_0, \epsilon)$
$\delta(q_0, b, b) = (q_0, bb)$
$\delta(q_0, \epsilon, Z_0) = (q_1, \epsilon)$