$S \to L_1 . L_2$	$L_1.side = 1,\ L_2.side = 0$ $S.val = L_1.val + L_2.val$
$S \to L$	$S.val = L.val$ $L.side = 1$
$L \to L_1 B$	$L_1.side = L.side$ $L.len = L_1.len + 1$ $L.val = L_1.side\ ?\ L_1.val * 2 + B.val$ $: L_1.val + B.val * 2^{L.len}$
$L \to B$	$L.len = 1$ $L.val = L.side\ ?\ B.val : B.val / 2$
$B \to 0$	$B.val = 0$
$B \to 1$	$B.val = 1$