$2^{32}-$
$1(4294967295)$
$count >$
$0 count <$
$0 count =$
0

$LPUSHX$	$Ins(0, ele)$
$RPUSHX$	$Ins(len, ele)$
$LINSERT$	$Ins(pos, ele)$
$LPOP$	$Del(0)$
$RPOP$	$Del(len-1)$
$RPOPLPUSH$	$Del(len-1)$
$LSET$	$Set(pos, ele)$
$LPUSH$	$Ins(0, str)$
$RPUSH$	$Ins(len, str)$
$LTRIM$	$Del(0, pos1-1; pos2+1, len-pos2-1)$
$LREM$	$Del(pos1, len1; pos2, len2; ...; posk, lenk)$

len

$OT(Ins(p_{k+1}, s_{k+1}), Del(p_1, l_1; p_2, l_2; ...; p_k, l_k))$

$= \{ I\ ns(p_{k+1}, s_{k+1}) p_{k+1} \leq p_1 no-opp_i < p_{k+1} < p_i + l_i Ins(p_{k+1} - l_1 - l_2 - ... - l_i, s_{k+1}) p_i + l_i \leq p_{k+1} \leq p_{i+1} Ins(p_{k+1} - l_1 - l_2 -$

(1)

$\begin{vmatrix} s \end{vmatrix} |s|$

$OT(Del(p_1, l_1; p_2, l_2; ...; p_k, l_k), Ins(p_{k+1}, s_{k+1}))$

$= \{ D\ el(p_1 + |s_{k+1}|, l_1; p_2 + |s_{k+1}|, l_2; ...; p_i, l_i; p_{i+1} + |s_{k+1}|, l_{i+1}; ...; p_k + |s_{k+1}|, l_k) p_{k+1} \leq p_1 Del(p_1, l_1; p_2, l_2; ...; p_{i-1}, l_{i-1}; p_i,$

(2)

$OT(Del(p_{k+1}, l_{k+1}), Del(p_1, l_1; p_2, l_2; ...; p_k, l_k))$

p_{k+1}	$p_{k+1} + l_{k+1}$	p_{k+1}
$p_{k+1} < p_1$		p_{k+1}
$p_i \leq p_{k+1} < p_i + l_i$		$p_i - l_1 - l_2 - ... - l_{i-1}$
$p_i + l_i \leq p_{k+1} < p_{i+1}$		$p_{k+1} - l_1 - l_2 - ... - l_{i-1}$
$p_{k+1} \geq p_k + l_k$		$p_{k+1} - l_1 - l_2 ... - l_k$

$OT(Del(p_{k+1}, l_{k+1}), Del(p_1, l_1; p_2, l_2; ...; p_k, l_k))$

p_{k+1}	$p_{k+1} + l_{k+1}$		l_{k+1}
$p_{k+1} < p_1$	$p_{k+1} + l_{k+1} \leq p_1$		l_{k+1}
	$p_j < p_{k+1} + l_{k+1} \leq p_j + l_j$	$p_j - l_1 - l_2 - ... - l_{j-1} - p_{k+1}$	
	$p_j + l_j < p_{k+1} + l_{k+1} \leq p_{j+1}$	$l_{k+1} - l_1 - l_2 - ... - l_j$	
	$p_{k+1} + l_{k+1} > P_k + l_k$	$l_{k+1} - l_1 - l_2 - ... - l_k$	
$p_i \leq p_{k+1} < p_i + l_i$	$p_j < p_{k+1} + l_{k+1} \leq p_j + l_j$	$p_j - p_i - l_i - l_{i+1} ... - l_{j-1}$	
	$p_j + l_j < p_{k+1} + l_{k+1} \leq p_{j+1}$	$p_{k+1} + l_{k+1} - p_i - l_i - l_{i+1} - ... - l_j$	
	$p_{k+1} + l_{k+1} > P_k + l_k$	$p_{k+1} + l_{k+1} - p_i - l_i - l_{i+1} - ... - l_k$	
$p_i + l_i \leq p_{k+1} < p_{i+1}$	$p_j < p_{k+1} + l_{k+1} \leq p_j + l_j$	$p_j - p_{k+1} - l_{i+1} - l_{i+2} - ... - l_{j-1}$	
	$p_j + l_j < p_{k+1} + l_{k+1} \leq p_{j+1}$	$l_{k+1} - l_{i+1} - l_{i+2} - ... - l_j$	
	$p_{k+1} + l_{k+1} > P_k + l_k$	$l_{k+1} - l_{i+1} - l_{i+2} - ... - l_k$	
$p_{k+1} \geq p_k + l_k$			l_{k+1}