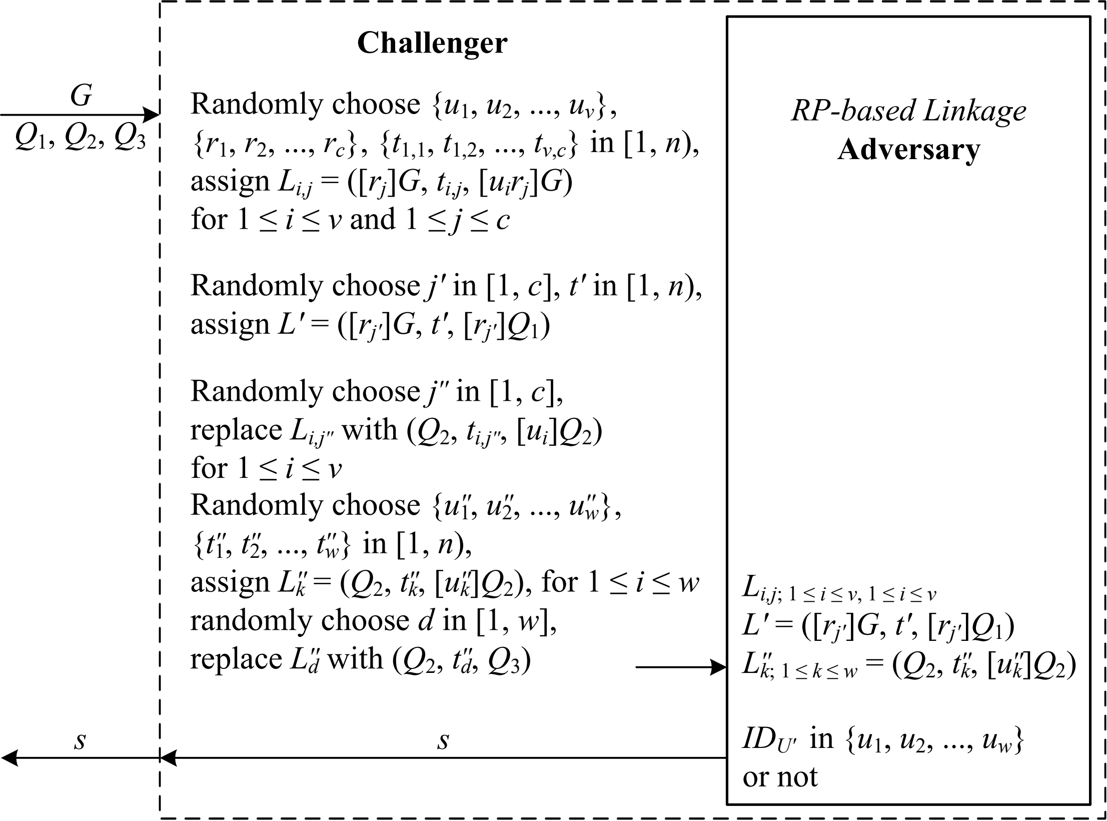
$G$
$Q_1, Q_2, Q_3$
**Challenger**
Randomly choose $\{u_1, u_2, ..., u_v\}$,
$\{r_1, r_2, ..., r_c\}$, $\{t_{1,1}, t_{1,2}, ..., t_{v,c}\}$ in $[1, n)$,
assign $L_{i,j} = ([r_j]G, t_{i,j}, [u_i r_j]G)$
for $1 \leq i \leq v$ and $1 \leq j \leq c$
Randomly choose $j'$ in $[1, c]$, $t'$ in $[1, n)$,
assign $L' = ([r_{j'}]G, t', [r_{j'}]Q_1)$
Randomly choose $j''$ in $[1, c]$,
replace $L_{i,j''}$ with $(Q_2, t_{i,j''}, [u_i]Q_2)$
for $1 \leq i \leq v$
Randomly choose $\{u''_1, u''_2, ..., u''_w\}$,
$\{t''_1, t''_2, ..., t''_w\}$ in $[1, n)$,
assign $L''_k = (Q_2, t''_k, [u''_k]Q_2)$, for $1 \leq i \leq w$
randomly choose $d$ in $[1, w]$,
replace $L''_d$ with $(Q_2, t''_d, Q_3)$
*RP-based Linkage*
**Adversary**
$L_{i,j;\ 1 \leq i \leq v,\ 1 \leq i \leq v}$
$L' = ([r_{j'}]G, t', [r_{j'}]Q_1)$
$L''_{k;\ 1 \leq k \leq w} = (Q_2, t''_k, [u''_k]Q_2)$
$ID_{U'}$ in $\{u_1, u_2, ..., u_w\}$
or not
$s$
$s$