Symbolic evaluation

$SE(i, \rho, L)$ is defined by a case analysis on the i'th instruction:

SET x, e	$SE(i+1, \rho[x \leftarrow \rho(e)], L)$
ASSERT P	$\rho(P) \wedge SE(i+1, \rho, L)$
MEMRD e	$\texttt{saferd}(\rho(m), \rho(e)) \wedge SE(i+1, \rho, L)$
MEMWR e_1 e_2	$\texttt{safewr}(\rho(m), \rho(e_1), \rho(e_2)) \wedge SE(i+1, \rho, L)$
INV $P, \{x_1, \ldots, x_k\}$	$\rho(P) \wedge \forall y_1 \ldots y_k.(\rho'(P) \Rightarrow SE(i+1, \rho', L[i \leftarrow \rho']))$ if $i \notin Dom(L)$, $y_1 \ldots y_k$ fresh, $\rho' = \rho[x_1 \leftarrow y_1, \ldots x_k \leftarrow y_k]$
INV $P, \{x_1, \ldots, x_k\}$	$\rho(P) \wedge \forall x \notin \{x_1, \ldots, x_k\} : \rho(x) = L(i)(x)$ if $i \in Dom(L)$

BRANCH $P_1 \rightarrow i_1 \Box P_2 \rightarrow i_2 \quad (\rho(P_1) \Rightarrow SE(i_1, \rho, L)) \wedge$
$(\rho(P_2) \Rightarrow SE(i_2, \rho, L))$

Demands:

- if $i_1 < i$ then i_1'th instruction is INV
- if $i_2 < i$ then i_2'th instruction is INV