

## A Actions Definitions

Table 1 reports the definition of all oracle actions.

Action	Condition	Effect
ADD	$(s_a, s_b) \in E_s, (s_c, s_b) \notin E_s, (t_a, t_b) \in E_t$ $(t_c, t_b) \in E_t$	$E_s = E_s \cup (s_c, s_b)$
ADD-ADDN	$s_a, s_b) \in E_s, A^{-1}(t_c) = nil, (t_a, t_b) \in E_t$ $(t_c, t_b) \in E_t$	$V_s = V_s \cup t_c,$ $E_s = E_s \cup (s_c, s_b)$
REMOVE	$(s_a, s_b) \in E_s, (s_c, s_b) \in E_s, (t_a, t_b) \in E_t$ $(t_c, t_b) \notin E_t$	$E_s = E_s - (s_c, s_b)$
REMOVE-RMN	$(s_a, s_b) \in E_s, (s_c, s_b) \in E_s, (t_a, t_b) \in E_t$ $A(s_c) = nil$	$V_s = V_s - s_c,$ $E_s = E_s - (s_c, s_b)$
MERGE	$(s_a, s_b) \in E_s, (s_c, s_d) \in E_s, (s_c, s_b) \notin E_s$ $(t_a, t_b) \in E_t, (t_c, t_d) \notin E_t, (t_c, t_b) \in E_t$	$E_s = E_s \cup (s_c, s_b) - (s_c, s_d)$
MERGE-RMN	$(s_a, s_b) \in E_s, A(s_d) = nil, (s_c, s_b) \notin E_s$ $(t_a, t_b) \in E_t, (t_c, t_d) \notin E_t, (t_c, t_b) \in E_t$	$V_s = V_s - s_d,$ $E_s = E_s \cup (s_c, s_b) - (s_c, s_d)$
SPLIT	$(s_a, s_b) \in E_s, (s_c, s_b) \in E_s, (s_c, s_d) \in E_s$ $(t_a, t_b) \in E_t, (t_c, t_d) \in E_t$	$E_s = E_s \cup (s_c, s_d) - (s_c, s_b)$
SPLIT-ADDN	$(s_a, s_b) \in E_s, (s_c, s_b) \in E_s, A^{-1}(t_d) = nil$ $(t_a, t_b) \in E_t, (t_c, t_d) \in E_t$	$V_s = V_s \cup t_d,$ $E_s = E_s \cup (s_c, t_d) - (s_c, s_b)$
ADD-SIB	$(s_a, s_b) \in E_s, (s_a, s_c) \in E_s, (s_c, s_b) \notin E_s$ $(t_a, t_b) \in E_t, (t_a, t_c) \in E_t, (t_c, t_b) \in E_t$	$E_s = E_s \cup (s_c, s_b)$
ADD-SIB-ADDN	$(s_a, s_b) \in E_s, A^{-1}(t_c) = nil, (t_a, t_b) \in E_t$ $(t_a, t_c) \in E_t, (t_c, t_b) \in E_t$	$V_s = V_s \cup t_c,$ $E_s = E_s \cup (t_c, s_b)$
REMOVE-SIB	$(s_a, s_b) \in E_s, (s_a, s_c) \in E_s, (s_c, s_b) \in E_s$ $(t_a, t_b) \in E_t, (t_a, t_c) \in E_t, (t_c, t_b) \notin E_t$	$E_s = E_s - (s_c, s_b)$
REMOVE-SIB-RMN	$(s_a, s_b) \in E_s, (s_a, s_c) \in E_s, (s_c, s_b) \in E_s$ $(t_a, t_b) \in E_t, A(s_c) = nil$	$V_s = V_s - t_c,$ $E_s = E_s - (s_c, s_b)$

Table 1: Definition of all oracle actions.