

(a) $(\mathcal{P}(Var \times Lab), \cup, \subseteq)$

(b) For each node u the transfer function is,

$$f_u^{UEU} : \mathcal{P}(Var \times Lab) \rightarrow \mathcal{P}(Var \times Lab)$$

$$\forall S \subseteq Var \times Lab, f_u^{UEU}(S) = (S \setminus kill_{UEU}(u)) \cup gen_{UEU}(u)$$

where,

$$kill_{UEU}(u) = \{(x, v) \mid x \in writes(u), v \in Lab\}$$

$$gen_{UEU}(u) = \{(x, u) \mid x \in reads(st)\}$$

(c) Backward Analysis. Initial nodes are all the last nodes (nodes without any successors). The initial value is the empty set for all nodes.