

**Definition** (Upper closure operator). The *upper closure operator*  $\uparrow$  maps a subset to the smallest upper set that includes it:

$$\uparrow : \mathcal{P}\mathbf{P} \rightarrow \mathcal{U}\mathbf{P}$$

$$S \mapsto \{y \in \mathbf{P} \mid \exists x \in S : x \leq_{\mathbf{P}} y\}.$$