Definition (Min). Min : $\mathcal{P}P \to \mathcal{A}P$ is the map that sends a subset S of a poset to the minimal elements of that subset, **i.e.**, those elements $a \in S$ such that $a \leq_P b$ for all $b \in S$. In formulas:

Min:
$$\mathcal{P}\mathbf{P} \to \mathcal{A}\mathbf{P}$$

 $S \mapsto \{x \in S : (y \in S) \land (y \leq_{\mathbf{P}} x) \Rightarrow (x = y)\}.$

Note that Min(S) could be empty.