

**Definition (DP).** Given two posets **F** and **R**, a *design problem* with functionality **F** and resources **R** is a monotone function of the form

$$\mathbf{d} : \mathbf{F}^{\text{op}} \times \mathbf{R} \xrightarrow{\text{Pos}} \mathbf{Bool}.$$

This is also written as

$$\mathbf{d} : \mathbf{F} \multimap \mathbf{R}.$$