

**Definition** (Design Problem). A design problem (DP) is a tuple  $\langle F, R, \mathbf{d} \rangle$ , where  $F, R$  are posets and  $\mathbf{d}$  is a monotone map of the form

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

We represent it by an arrow  $\mathbf{d} : F \multimap R$ .