

Definition (Feasible set of a design problem). We define the *feasible set* $K_{\mathbf{d}}$ of a design problem $\mathbf{d} : \textcolor{green}{F}^{\text{op}} \times \textcolor{red}{R} \xrightarrow{\text{Pos}} \mathbf{Bool}$ as the subset of $\textcolor{green}{F}^{\text{op}} \times \textcolor{red}{R}$ for which \mathbf{d} is the *indicator function*, that is

$$K_{\mathbf{d}} = \{\langle \textcolor{green}{f}^*, \textcolor{red}{r} \rangle \in \textcolor{green}{F}^{\text{op}} \times \textcolor{red}{R} \mid \mathbf{d}(\textcolor{green}{f}^*, \textcolor{red}{r}) = \top\}.$$