

Lemma. There is a functor $\text{FixResMaxFun} : \mathbf{DP} \rightarrow \mathbf{Pos}_{\mathcal{L}}$ which maps:

1. An object (poset) of \mathbf{DP} to the same object (poset) in $\mathbf{Pos}_{\mathcal{L}}$.
2. A morphism $\mathbf{g} \in \text{Hom}_{\mathbf{DP}}(\mathbf{F}; \mathbf{R})$ to the morphism $K_{\mathbf{g}} \in \text{Hom}_{\mathbf{Pos}_{\mathcal{L}}}(\mathbf{R}; \mathbf{F})$,
where:

$$K_{\mathbf{g}}^{\star} : \mathbf{R} \rightarrow_{\mathbf{Pos}} \mathcal{L} \mathbf{F}$$

$$r \mapsto \{f \in \mathbf{F} \mid \mathbf{g}(f^*, r)\}.$$