

$$h_{\text{loop(dp)}} : F_1 \rightarrow \mathcal{AR}, \tag{0.1}$$

$$f_1 \mapsto \begin{cases} \text{using} & r, f_2 \in R, \\ \text{Min}_{\leq_R} & r, \\ \text{s.t.} & r \in h_{\text{dp}}(f_1, f_2), \\ & r \leq_R f_2. \end{cases} \tag{0.2}$$