Listing 1: Algorithm $\mathsf{K}(t, \chi_t, F_t, \langle \rho_1, \ldots, \rho_\ell \rangle, R)$ for Step 3 (DP) and nice TDs.

In: Node t, bag χ_t, clauses F_t, $\langle \rho_1, \ldots \rho_\ell \rangle$ is the sequence of tables for child nodes $\langle t_1, \ldots, t_\ell \rangle$ of t, set $R \subseteq 2^{\chi_t \to \{0,1\}}$ of assignments. **Out:** Local Storage ρ_t.

if type$(t) =$ *leaf* **then** $\rho_t := \{\langle \emptyset, 1 \rangle \mid \emptyset \in R\}$
else if type$(t) =$ *intr, and* $a \in \chi_t$ *is introduced* **then**
  $\rho_t := \{\langle \beta, c \rangle \quad \mid \langle \alpha, c \rangle \in \rho_1, \beta \in \{\alpha^+_{a \mapsto 0}, \alpha^+_{a \mapsto 1}\}, F_t(\beta) = \emptyset, \beta \in R\}$
else if type$(t) =$ *rem, and* $a \notin \chi_t$ *is removed* **then**
  $\rho_t := \{\langle \alpha^-_a, \Sigma_{\langle \beta, c \rangle \in \rho_1 : \alpha^-_a = \beta^-_a} c \rangle \quad \mid \langle \alpha, \cdot \rangle \in \rho_1, \alpha^-_a \in R\}$
else if type$(t) =$ *join* **then**
  $\rho_t := \{\langle \alpha, c_1 \cdot c_2 \rangle \quad \mid \langle \alpha, c_1 \rangle \in \rho_1, \langle \alpha, c_2 \rangle \in \rho_2, \alpha \in R\}$
return ρ_t

$\alpha^-_e := \alpha \setminus \{e \mapsto 0, e \mapsto 1\}$, $\alpha^+_{e \mapsto b} := \alpha \cup \{e \mapsto b\}$.