$$\frac{}{C <: C} \text{ SubRefl} \qquad \frac{}{\texttt{int} <: \texttt{int}} \text{ SubInt} \qquad \frac{}{\texttt{str} <: \texttt{str}} \text{ SubStr}$$

$$\frac{\text{class } C \text{ extends } D}{!C <:\,!D} \text{ SubClass} \qquad \frac{!C <:\,!D}{C <: D} \text{ SubOptConv}$$

$$\frac{\Gamma(x) = A}{\Gamma \vdash x : A} \text{ TVar} \qquad \frac{}{\Gamma \vdash string : \texttt{str}} \text{ TStr} \qquad \frac{}{\Gamma \vdash int : \texttt{int}} \text{ TInt}$$

$$\frac{\overline{\Gamma \vdash e_i : \tau_i} \qquad \Gamma \vdash x : \{\ldots, l(\overline{\tau'_i}) : \tau', \ldots\} \qquad \overline{\tau_i <: \tau'_i}}{\Gamma \vdash x.l(\overline{e_i}) : \tau'} \text{ TApp}$$

$$\frac{\Gamma \vdash e_1 : \tau_1}{\tau_1 <: \texttt{int} \quad \Gamma \vdash \tau \quad \Gamma \vdash e_2 : \tau_2 \quad \Gamma \vdash e_3 : \tau_3 \quad \tau_2 <: \tau \quad \tau_3 <: \tau}{\Gamma \vdash if\ e_1\ e_2\ e_3 : \tau} \text{ TIf}$$

$$\frac{\Gamma \vdash e_1 : \tau_1 \quad \Gamma \vdash e_2 : \tau_2 \quad \tau_1 <: \texttt{int} \quad \tau_2 <: \texttt{int}}{\Gamma \vdash e_1 + e_2 : \texttt{int}} \text{ TPlus}$$

$$\frac{\Gamma \vdash e : \{\ldots l : \tau \ldots\}}{\Gamma \vdash e.l : \tau} \text{ TField}$$

$$\frac{\Gamma \vdash e_i : \tau_i \quad \Gamma(C) = \{\ldots, \overline{l : \tau'}, \ldots\} \quad \overline{\tau <: \tau'}}{\Gamma \vdash \text{new } C(\overline{e}) : C} \text{ TNew}$$

$$\frac{\overline{\Gamma \vdash D} \quad \overline{\Gamma \vdash e : \tau'''} \quad \overline{\tau''' <: \tau'}}{\Gamma \vdash \text{class } C \text{ extends } \overline{D}\ \{\overline{l : \tau}, \overline{l'(\overline{l'' : \tau''}) : \tau' = \{e\}}\}} \text{ TClass}$$

Dynamic semantics

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