Hazel Assistant Calculus WIP

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Abstract

The hazelnut assistant calculus provides an extensible framework for type- and value-directed completion and refactoring support in a structured editing context.

CCS Concepts: • **Software and its engineering → General programming languages**.

Keywords: live programming, code completion, refactoring, GUIs

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YOOO

1 Assistant Calculus

blah blah blah types

TODOs:

- get cursor icons from hazelnut paper DONE
- get right arrow for bidi DONE

$$\texttt{Suggest Hole Analytic}\quad \frac{\mathsf{Intros}(\tau) \curvearrowright \mathrm{A}_{intros} \qquad \mathsf{Elims}(\Gamma, \tau) \curvearrowright \mathrm{A}_{elims}}{\Gamma \vdash \triangleright\langle\rangle\triangleleft \Leftarrow \tau \curvearrowright \mathrm{A}_{intros} \cup \mathrm{A}_{elims}}$$

$$\texttt{Suggest Elims}\quad \frac{\begin{array}{cc}\mathsf{ElimCase} \curvearrowright \mathrm{A}_{case} & \mathsf{Var}(\Gamma, \tau) \curvearrowright \mathrm{A}_{var} \\ \mathsf{VarApp}(\Gamma, \tau) \curvearrowright \mathrm{A}_{varapp} & \mathsf{Proj}(\Gamma, \tau) \curvearrowright \mathrm{A}_{proj}\end{array}}{\mathsf{Elims}(\Gamma, \tau) \curvearrowright \mathrm{A}_{case} \cup \mathrm{A}_{var} \cup \mathrm{A}_{varapp} \cup \mathrm{A}_{proj}}$$

$$\texttt{IntrosTriv}\quad \frac{}{\mathsf{Intros}(1) \curvearrowright \{\texttt{construct triv}\}}$$

$$\texttt{IntrosProd}\quad \frac{}{\mathsf{Intros}(\tau_1 \times \tau_2) \curvearrowright \{\texttt{construct pair}\}}$$

$$\texttt{IntrosArrow}\quad \frac{}{\mathsf{Intros}(\tau_1 \to \tau_2) \curvearrowright \{\texttt{construct lam x}\}}$$

$$\texttt{IntrosSum}\quad \frac{}{\mathsf{Intros}(\tau_1 + \tau_2) \curvearrowright \texttt{construct inj L}, \texttt{construct inj R}}$$

Figure 1. Base suggestion judgments

References

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