# A TYPE THEORY WITH SCOPED EQUALITY REFLECTION

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We have the following judgments:

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|---|---|
| $\vdash \Sigma\ \mathrm{sig}$ | $\Sigma$ is a valid signature |
| $\vdash^{\mathcal{H}}_{\Sigma} \Gamma\ \mathrm{ctx}$ | $\Gamma$ is a valid context |
| $\Gamma \vdash_{\Sigma} \mathcal{H}\ \mathrm{hints}$ | $\mathcal{H}$ is a valid hints set |
| $\Gamma \vdash^{\mathcal{H}}_{\Sigma} M : A$ | $M$ has type $A$ |
| $\Gamma \vdash^{\mathcal{H}}_{\Sigma} M \equiv N : A$ | $M$ equals $N$ at type $A$ |

The judgments for the theory are given inductive-recursively below.

(Signatures)
$$\frac{}{\vdash \diamond\ \mathrm{sig}} \qquad \frac{\vdash \Sigma\ \mathrm{sig} \quad \diamond \vdash^{\diamond}_{\Sigma} A : \mathbb{U} \quad \Sigma \# c}{\vdash \Sigma, c : A\ \mathrm{sig}}$$

(Contexts)
$$\frac{}{\vdash^{\mathcal{H}}_{\Sigma} \diamond\ \mathrm{ctx}} \qquad \frac{\vdash^{\mathcal{H}}_{\Sigma} \Gamma\ \mathrm{ctx} \quad \Gamma \vdash^{\mathcal{H}}_{\Sigma} A : \mathbb{U} \quad \Gamma \# x}{\vdash^{\mathcal{H}}_{\Sigma} \Gamma, x : A\ \mathrm{ctx}}$$

(Hints)
$$\frac{}{\Gamma \vdash \diamond\ \mathrm{hints}} \qquad \frac{\Gamma \vdash_{\Sigma} \mathcal{H}\ \mathrm{hints} \quad \Gamma \vdash^{\mathcal{H}}_{\Sigma} A : \mathbb{U} \quad \Gamma \vdash^{\mathcal{H}}_{\Sigma} a, b : A}{\Gamma \vdash_{\Sigma} \mathcal{H}, a \equiv b : A\rangle\ \mathrm{hints}}$$

(Projection)
$$\frac{x : A \in \Gamma}{\Gamma \vdash^{\mathcal{H}}_{\Sigma} x : A} \qquad \frac{c : A \in \Sigma}{\Gamma \vdash^{\mathcal{H}}_{\Sigma} c : A} \qquad \frac{a \equiv b : A \in \mathcal{H}}{\Gamma \vdash^{\mathcal{H}}_{\Sigma} a \equiv b : A}$$