

# Foundations - type theory

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## 1 Deductive system

### 1.1 Contexts

**Definition 0.1.** We will note  $\epsilon$  for the empty context

**Axiom 0.1.** empty derivation :  $rule\_empty\_derivation : \epsilon \longrightarrow empty\_context\ ctx$

**Axiom 0.2.** context extension :  $rule\_context\_extension : \Gamma \vdash A : \mathcal{U}_i, x\ not\ in\ dom(\Gamma) \longrightarrow \Gamma, x : A\ ctx$

**Axiom 0.3.** variable rule :  $rule\_variable : \Gamma\ ctx, x : A\ in\ \Gamma \longrightarrow \Gamma \vdash x : A$