What distinguishes Type Theory from Set Theory?

What is the meaning of $n\,\exists\quad {}^{2}\underline{\leq} n\quad n$

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- **Set1 Tf 0 -202 0 Td (Theory)Tj /R18 1 Tf 0 -20.6626 20.66**

Proofs for $\forall n \exists m \; m^2 \le n \wedge n < (m+1)^2$

- **Nonconstructive**
  - { Assume n wouldn't exist m AThenTj 2.1396 (exist)525

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Proofs for $\forall n\, \exists m\, m^2 \le n \wedge n < (m+1)^2$

- **Nonconstructive**
  - Assume m wouldn't exist for some n
  - Then for n [illegible] Tf 1764.7871 -0 545652

How to extract algorithms from proofs?

- **Use formal logic to express proof**
  - { First-Order Logic + Induction + Basic Arithmetic **Type Theory**
  - { Proof rules tie pro

Proof & program re nement in Type Theory

Proof Editor

The Nuprl System

Interactive

Febr

Sem

Seminar,

Are there better proofs?

Mathematically

- Proof is short and "elegant"
- why change it?

Computationally

- Extracted ed