# A Case Study in Dependent Type Theory: Extracting a Certified Program from the Formal Proof of its Specification

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### Overview

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- 2. The Case
- 3. Approach & Design Choices
- 4. Implementation
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  - ► Π-types to model universal quantification

### **Proof Assistants**

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  - uses Gallina as its specification language
  - uses Ltac as its tactic language, for ease of use
  - supports extraction of programs

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  - is it feasible to formalize complex proofs, such as these?
  - is the formalization process worth the effort?

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