

# C-CoRN: The Constructive Coq Repository @ Nijmegen

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# The Constructive Coq Repository @ Nijmegen

1. Overview of CoRN and C-CoRN
2. History
3. Some Examples
4. Features
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# The Constructive Coq Repository @ Nijmegen

## What?

A library of constructive mathematics formalized in Coq

## Where?

Repository: University of Nijmegen (NL)

Users: (some day) all over the world...

## Why?

Formalize mathematics in a uniform way

## Origins

- The FTA project [1999-2001]
  - Algebraic Hierarchy
  - Real and complex numbers, polynomials
- Real Analysis [2001-2002]
  - Partial Functions
  - Continuity, differentiation, integration
  - Series of real numbers and functions, transcendental functions
- CoRN and C-CoRN [2002-]

## Methodology

- Aim at generality
- Constructive formalization — but compatible with classical reasoning
- Mixed sort logic
- Applications: algebraic reasoning, program extraction

## Organization

- Internal coherence
  - structured according to subject
  - syntax conventions
- Emphasis on documentation
  - documentation vs. presentation...
  - focus on mathematical and metaformalization issues

## The Future

- More users
- More topics
  - finite groups
  - complex analysis
  - number theory