

Coq

論文

Thm Three-Colored-Thm: A  $\longleftrightarrow$  Thm Three-Colored-Thm: A  
 proof :  
 :  
 qed.

前 Caxiom 1  
 Thm Theorem A:  $B \rightarrow C$   $\leftarrow$  Caxiom 1 是公理と証明  
 Thm Theorem A:  $B \rightarrow C$  証明は示した。

今 Thm Theorem A: Caxiom 1  $\rightarrow B \rightarrow C$   $\xrightarrow{\text{OK}}$  X Thm Theorem A: Caxiom 1  $\rightarrow B \rightarrow C$

begin section  
 Caxiom 1  
 Thm Theorem A':  $B \rightarrow C$   
 proof Theorem A is Caxiom 1  
 end section

$\longleftrightarrow$  OK  $\leftarrow$  Caxiom 1 是公理と証明  
 Thm Theorem A:  $B \rightarrow C$   
 証明は示した。

Thm Theorem B':  $B \rightarrow C$   
 proof Theorem B is Caxiom 1  $\neq$

$$\begin{cases} f(0) = 1 \\ f(n+1) = n + f(n) \end{cases}$$

$$f(x) = \text{if } x > 0 \text{ then } x \text{ else } -x$$

Fixpoint f(n) = if n = 0 then 1 else n + f(n-1)

f は再帰的関数定義  
 f は再帰関数

Fixpoint F(f: nat  $\rightarrow$  Color) (x y: nat): Color :=  
 match y with  
 | 0  $\Rightarrow$  f x  
 | S y'  $\Rightarrow$  mix (F f x y') (F f (x+1) y')  
 end.

F f : nat  $\rightarrow$  nat  $\rightarrow$  Color

$$\vdash \forall f: \text{nat} \rightarrow \text{Color} \quad \forall x, y, c_0, c_1. \quad \text{F f } x \ y = c_0 \rightarrow \text{F f } x \ y = c_1 \rightarrow c_0 = c_1$$

$$\quad \quad \quad (C_{\text{pos } x \ y \ c_0}) \quad (C_{\text{pos } x \ y \ c_1})$$

Unif