

## Coalgebras

```
CoAlgebra : (func : Functor U) → U ⊢
CoAlgebra func = Σ A : _ , (A → F.Fn A) where
  private
    module F = Functor func

module CoAlgebra func (co : CoAlgebra {U} func) where
  open Functor func

  (_) : U ⊢
  (_) = co .pr₁

  _↓ : (_) → Fn (_)
  _↓ = co .pr₂

module CoAlgebra₂ func (a b : CoAlgebra {U} func) where
  open Functor func

  open CoAlgebra func

  f-co-morphism : U ⊢
  f-co-morphism = Σ f : (( a ) → ( b )) , Fm f ∘ (a ↓) ~ (b ↓) ∘ f

  module Morphism (m : f-co-morphism) where
    _→ : ( a ) → ( b )
    _→ = m .pr₁

    _comm : Fm _ ∘ (a ↓) ~ (b ↓) ∘ _
    _comm = m .pr₂
```