

Introduction to Interactive Proof of Software

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Lecture 5

How to discriminate constructors

Aburd = extreme confusion

- ▶ A trivial consequence of absurdity (False) is that all values are equal, and that all types are equal as well (including in Set and Prop).
- ▶ Conversely, if all values are equal in any type, including Prop, we get $\text{False} = \text{True}$, i.e., False becomes provable
- ▶ Pattern-matching on constructors allows us to map distinct constructors C_i to different expressions E_i if 2 constructors C_i and C_j happened to be equated, this confusion could then be propagated to the corresponding expressions E_i and E_j ;
Taking $E_i = \text{True}$ and $E_j = \text{False}$, False becomes provable

See [lecture05.v](#)