

Constructive Logic

98-317: Hype For Types

Due: 08:00 PM, Monday, February 7, 2022

Introduction

In class we introduced the Curry-Howard Correspondence, which identifies Propositions with Types, and Programs with Proofs. For this homework, you'll test your intuition about Curry-Howard and flex your proof writing muscles by doing some programming.

Turning In the Homework: Submit your `handin.zip` to the Constructive Logic assignment on Gradescope

Required

Part 1

Consider the following proposition in English, and translate them into types. Fill in the types of the first five values in `clogic.sig`.

- `easy` : True is true and the negation of False is true
- `andElim1` : If A is true and B is true, then A is true.
- `impTrans` : If A implies B and B implies C , then if A is true, then C is true.
- `sameOR` : A or A is true if and only if A is true.
- `similarOR` : If A or B is true, and A implies B , then B is true.

Part 2

Implement `clogic.sml`, proving the previously described positions, and 6 others whose types we've provided.