

Type theory. Gödel-Gentzen negative translation.

CLTT refers to the March 2004 version of the handout *Constructive Logic and Type Theory*, by Erik Palmgren. (Available on the webpage of the course.) The BONUS PROBLEMS are marked (+) below. Your solutions of these are to be presented at the blackboard October 2. Maximum bonus for this set is 2.5%.

1. (+) Exercise 7.1 (e), (f) in CLTT.
2. (+) Translate the formula

$$(\forall x \in D) (A(x) \wedge B(x)) \rightarrow (\forall x \in D) A(x) \wedge (\forall x \in D) B(x)$$

into a type of Martin-Löf type theory, using the propositions-as-types principle. Prove it to contain an element.

3. (+) Exercise 7.3 in CLTT. Compare your result with what is automatically generated by Coq.
 4. (+) Exercise 6.1 in CLTT.
 5. Exercise 6.2 (c), (e) in CLTT.
 6. (+) * Exercise 6.4 in CLTT
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