

# Constructive Logic (15-317), Fall 2016

## Recitation 11: Pre-exam Review and Some More Prolog

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### Pre-exam Review

The exam is tomorrow! Remember, you are allowed one double-sided sheet of handwritten notes. It is cumulative, but will likely focus on the topics introduced since the last exam:

- Cut Elimination in Sequent Calculus
- Inversion
- Restricted and Contraction-free Sequent Calculi
- Quantifiers and Dependent Types
- (Backward) Logic Programming
- Operational Semantics of Prolog
- Unification in Prolog

Now is a good time to get last minute questions in!

### More Prolog Practice

Try implementing the following problems in prolog:

- `non_member/2` where the first argument is not a member of the second (list) argument.
- `no_doubles/2` where the first argument and the second argument have the same members, but the first has no duplicates.
- `binary_tree/1` which defines a binary tree as its only argument.
- `tree_member/2` which determines whether the first argument appears as an element of the second (tree) argument.
- `isotree/2` which determines whether the two tree arguments are identical under swaps of sibling branches.
- `pre_order/2` where the second argument is a list of the preorder traversal of the elements of the first (tree) argument.
- `substitute(X, Y, A, B)` where B is a list almost exactly like A, but with every occurrence of Y swapped for X.