

# Homework 5

Please submit this work by Wednesday, May 14 at 11:59pm.

## Machine-Assisted Proof

Work through the chapters *Basics* and the first half (defined below) of *Induction* in Pierce et al's *Software Foundations*. The files `Basics.v` and `Induction.v` are available as part of the "Download" from the Software Foundations website( <http://www.cis.upenn.edu/~bcpierce/sf/>).

For the present assignment, fill in all the definitions and proofs in *Basics*, and everything in *Induction* up to but not including "More Exercises." That is, the last exercise you need to complete in *Induction* is `sevenb_n__oddb_Sn`.

Submit two files `Basics.v` and `Induction.v` in a directory `hw5` in your CS221 repository.

You will likely want to install `coq` and `coqide` on your machine in the course of this work. There is already some discussion of how to do so on piazza, and we expect there will be more discussions related to different platforms. In any case, all the software you need is installed and available on the department's Linux machines.

Regarding a certain moral hazard that presents itself here: the solutions to all the exercises in this text are readily available online from third parties. I checked. For better and for worse, this is the way of the world now. Those of us who teach are technologically outmached. I ask you to do your own work and jealously preserve your sense of what's right and what isn't.