

Exercise Set 7 — 26 October

7.1 Booleans and numbers illustrated

(Continued from exercises 5 and 6. This is probably rather more difficult.)

Implement an evaluator that produces a complete trace of evaluation in the style shown in class. That is, show all steps of evaluation, and for each step show the complete proof that justifies the step (according to the inference rules in Figure 3-2 of the textbook).

It is a good idea to divide the task into two parts. First, define a suitable data type to represent proofs along with a function that takes a term and produces a list of proofs. Second, work out how to show / graphically display / print to PDF (whichever you prefer) such a list of proofs.