Automation in Meta-Logic HOL

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December 20, 2019

SEMINAR MACHINE ETHICS AND NORMATIVE REASONING
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I'm still waiting for an email from Christoph with material and literature that my talk will build on. Thus, this is only a preliminary version of the talk concept and no references are given yet.

(Preliminary) Talk Concept

1. Why formalize deontic logics?
   Computer-formalization heavily depends on automation

2. How automize working in different logics?
   $\rightarrow$ HOL as a meta logic, Isabelle as a framework

3. Quick introduction to Isabelle/HOL [1]
   Brief Isabelle live demo: Defining natural numbers via `datatype` and proving a simple property etc.

4. Deontic logics and their automation in Isabelle
   $\rightarrow$ Live demo of formalized logic(s), demonstration of `sledgehammer` and `nitpick` in this context

5. Further research directions
   e.g. deontic logics still difficult to formalize

6. Summary and conclusion

Item 3 will probably be expanded upon and might turn into several subsections.

Literature and References

Handbook of deontic logic and TBD

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[1]This part is cut down depending on how much Isabelle was discussed before