Logic: A Motivation

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IBM Watson example

https://www.youtube.com/watch?v=Dyw04zksfXw
Knowrob: Why is knowledge so important?

- If the robot does not know about the task, the environment, or the robot, then the programmer has to hardcode everything.

- Programming/instructing at an abstract/semantic level:
  - Put the bolt into the nut and fasten it.
  - Pour water into the glass.
  - . . .
Knowrob: Ontology (knowrob.owl)
Knowrob: A task ontology
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Knowrob: Knowledge types
Knowrob: Procedural attachments

- Compute symbolic knowledge on demand from data structures that already exist on the robot by attaching procedures to semantic classes and properties.
- Re-use existing information and make sure abstract knowledge is grounded.

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Knowrob: Inferring storage location
Knowrob: Summary

- declarative knowledge: ontologies
- procedural attachment
- logical inference
- multi-modal representation

Video (13 mins):
https://www.youtube.com/watch?v=4usoE981e7I
Semantic Web