

9 Logical Languages

Advantages of logic languages

- High-level language in which knowledge can be expressed
- Well-understood formal semantics, unambiguous meaning to logical statements
- Precise notion of *logical consequence*
- Proof systems. Proof systems should be
 - sound [all derived statements follow semantically from the premises]
 - complete [all logical consequences of the premises can be derived in the proof system]
- Proof systems allow to trace the proof
- **Semantics** of a logical language: the truth of a sentence
- **Grounding** the connection, if any, between the logical reasoning process and the real environment
- **First Order Logic**: sound and complete proof systems