

# Syntax vs Semantics

**Syntax:** legal sentences in knowledge representation language

**Semantics:** meaning of sentences

## To be more detailed:

- Syntax refers to the formal structure of propositions, which is determined by a set of rules that govern how well-formed expressions can be constructed.
- These rules dictate what symbols and operators are allowed, how they can be combined, and what grammatical rules must be followed.
- For example, in propositional logic, the symbols "p" and "q" are commonly used as propositional variables, and the operators "¬" (negation), "∧" (conjunction), "∨" (disjunction), "→" (conditional), and "↔" (bi-conditional) are used to combine them.

# Syntax vs Semantics

## To be more detailed (Continued):

- Semantics, refers to the meaning of propositions, which is determined by their truth values.
- Semantics is concerned with the interpretation of propositions and the assignment of truth values to their components.
- For example, if we assign the truth value "true" to "p" and "false" to "q," we can determine the truth value of the compound proposition " $p \wedge \neg q$ ," which is "true  $\wedge$  true," or "false."
- In summary, syntax is concerned with the formal structure of propositions, while semantics is concerned with their meaning and truth values.

Quiz Time!