

**ordered
 n -tuple** An **ORDERED n -TUPLE**, $\langle \alpha_1, \alpha_2, \dots, \alpha_n \rangle$, consists of the n objects named by $\alpha_1, \alpha_2, \dots, \alpha_n$.

Comment. As with ordered pairs, changing the ordering of $\alpha_1, \alpha_2, \dots, \alpha_n$ usually changes the identity of the n -tuple.

**n -place
extensions** *Definition.* The **EXTENSION OF AN n -PLACE PREDICATE** is a set of ordered n -tuples of objects from the universe.

Example.

Given a universe containing the objects a, b , and c , and a two-place predicate R , the set $\{\langle a,b \rangle, \langle c,b \rangle, \langle a,a \rangle\}$ gives a possible extension for R . In this example, the sentences Rab , Rcb , and Raa are true, while the sentences Rac , Rbc , Rba , Rca , Rbb , and Rcc are all false.

**finite
interpretation** *Definition.* A finite interpretation for a set of sentences containing one-place and many-place predicates consists of the following:

- A finite universe, or domain.
- Extensions for all the predicates appearing in the sentences.