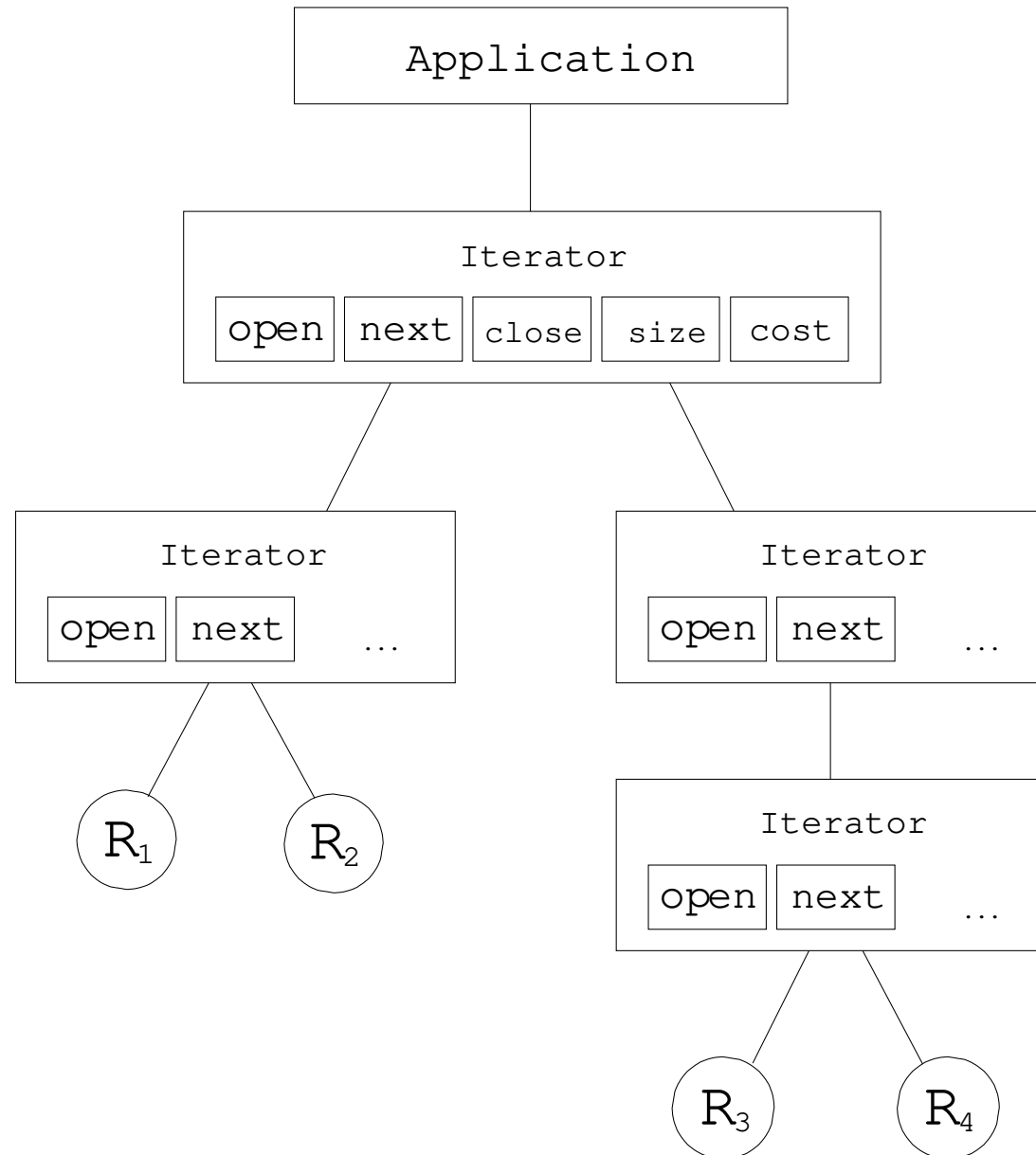


# Iterators

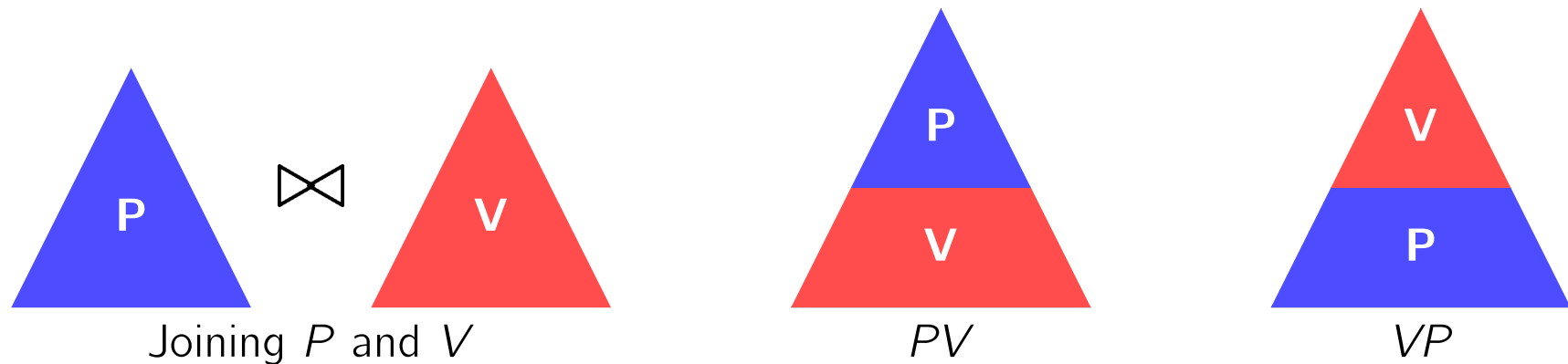


- Operators have to be implemented in a way so that they can be plugged together
- One approach is to implement them as *iterators*
  - Each operator produces a tuple on request from the operator above it

# Iterators (2)

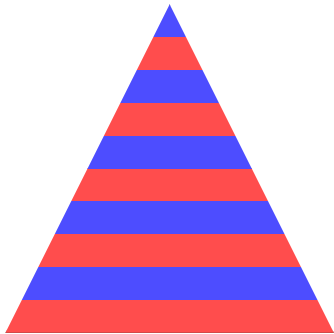


## Two-Dimensional Indexing



- ▶ **Join:** Join structure index with value index
- ▶ **PV:** Composite index on  $(P, V)$
- ▶ **VP:** Composite index on  $(V, P)$

# Interleaving Dimensions



Idea:

- ▶ Interleave dimensions of a key bit- or byte-wise
- ▶ Corresponds to the **z-order** space-filling curve