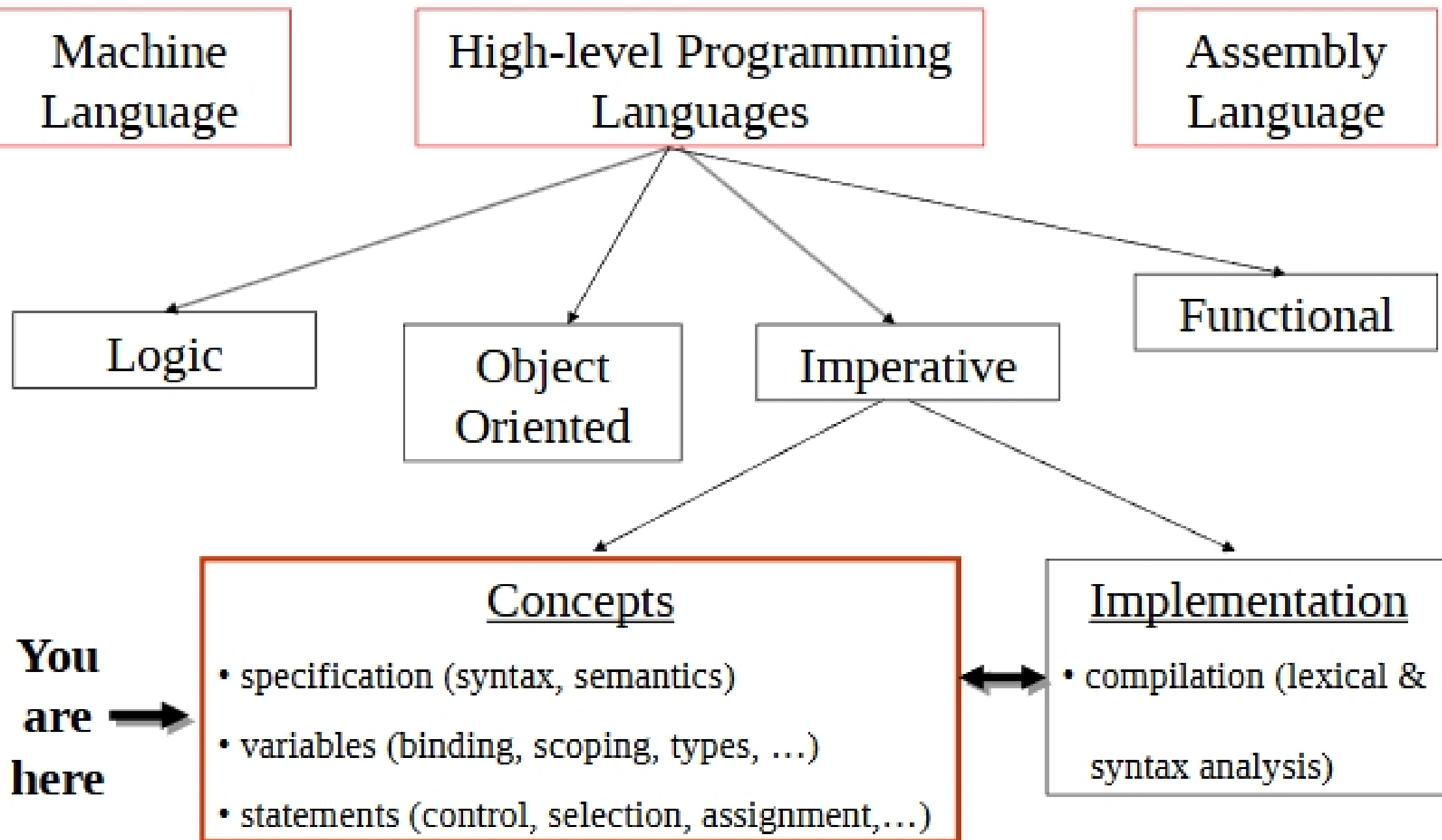


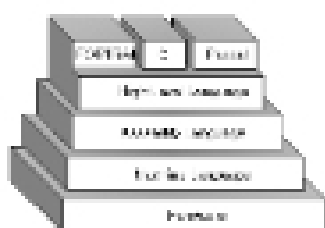
# CSE 452: Programming Languages

## Data Types



# Where are we?





# Types: Intuitive Perspective

---

- ◆ Behind intuition:
  - Collection of values from a “domain” (denotational perspective)
  - Internal structure of data, described down to small set of fundamental types (structural view)
  - Equivalence class of objects (implementor’s approach)
  - Collection of well-defined operations that can be applied to objects of that type (abstraction approach)
- ◆ Utility of types:
  - Implicit context
  - Checking: ensure that certain meaningless operations do not occur. (type checking can’t catch all).