Structural Knowledge

- Structural knowledge: the relationship between concepts and objects in the world.
- Hierarchical approach: built on classification and uses hierarchies as the structures for knowledge representation, presented in a graphical format.
    - Semantic networks: nodes represent concepts, and edges represent relationships between concepts.
    - Ontologies
        - A formal specification of concepts, relationships, and constraints within a domain that enables machines to reason automatically.
        - It defines classes (concepts), subclasses (hierarchical relations), and properties (attributes or relations) that describe how entities interact.
        - Unlike simple taxonomies, ontologies also include logical axioms and constraints that specify allowable relationships and permit inference and consistency checking through automated reasoning.
        - Classes: Main concepts or categories (e.g. Person, Animal).
        - Subclasses: Subcategories (e.g. Dog $\subset$ Animal).
        - Properties: Attributes (e.g. hasPart, hasColor).
        - Relations: Connection rules (e.g. MemberOf, SubsetOf).
        - Constraints: Logical constraints (e.g. disjointness, transitivity) that enable inference.