Intelligent Agents

AGENTS AND ENVIRONMENT

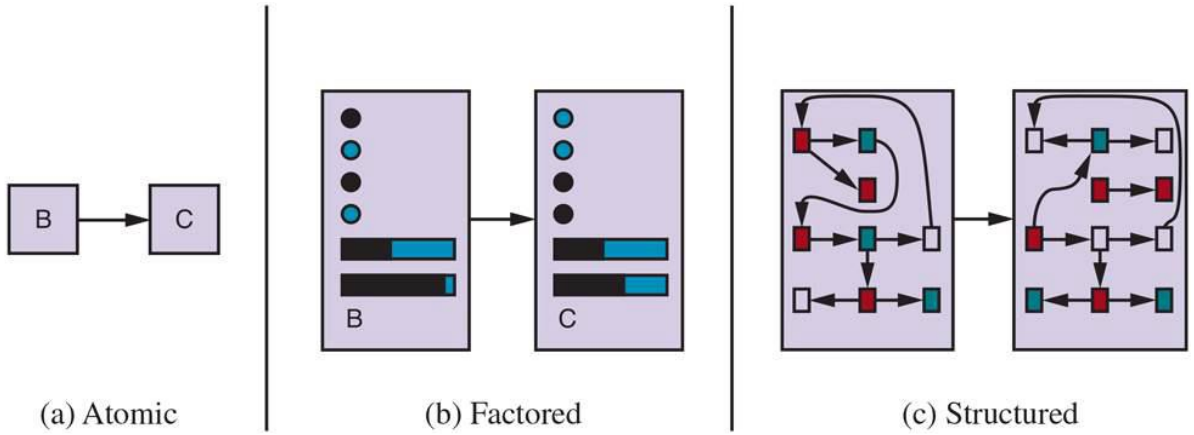
Intelligent Agent | Functionality of Components

- What is the world like now?
- What action should I do now?
- What do my action do?

- How these components work???

Representation of States and Transition between them

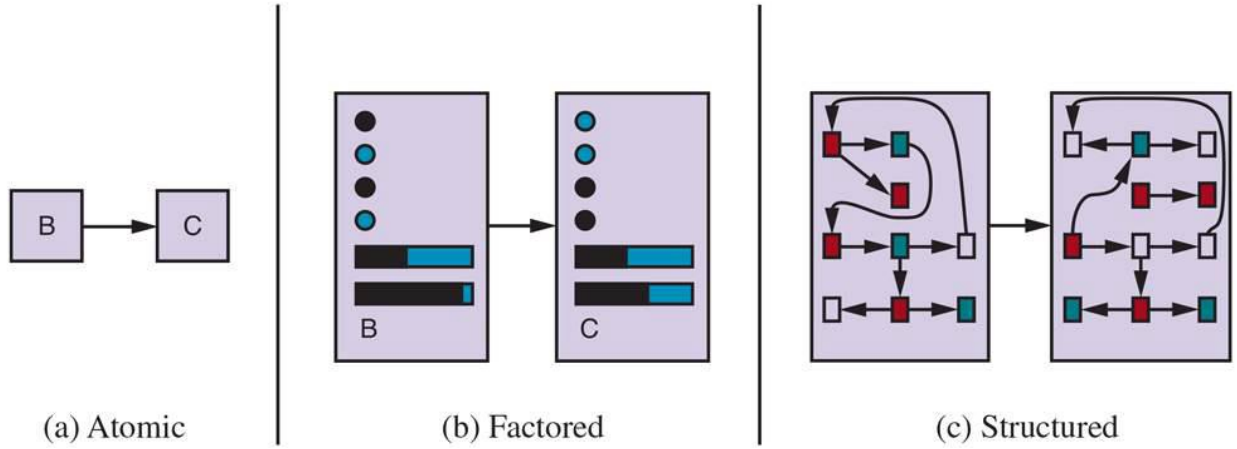
- Atomic
- Factored
- Structured



Atomic Representation

- Each state of the world is invisible.
- There is no internal structure.

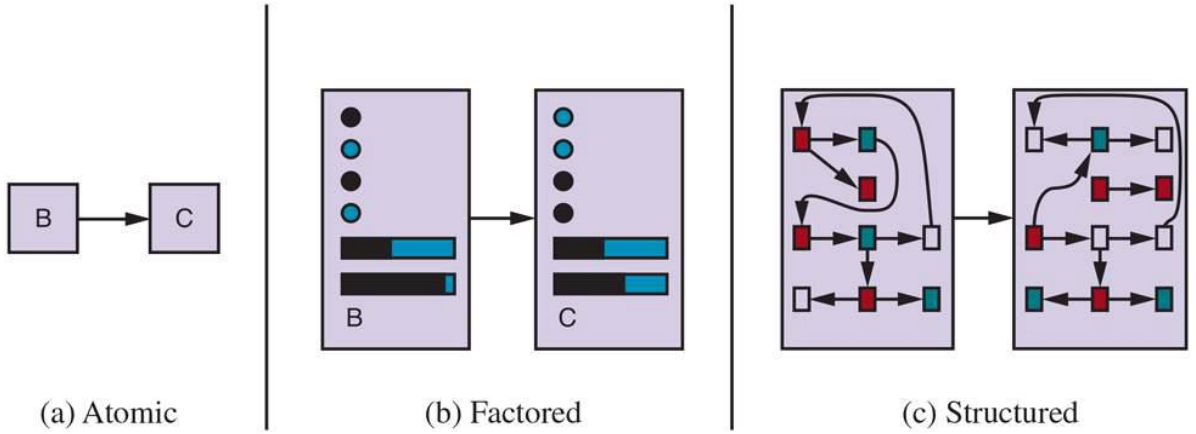
- Used in:
  - Search algorithms
  - Hidden Markov models
  - Markov decision processes



Factored Representation

- Splits up each state into a fixed set of variables or attributes, each of which can have a value.

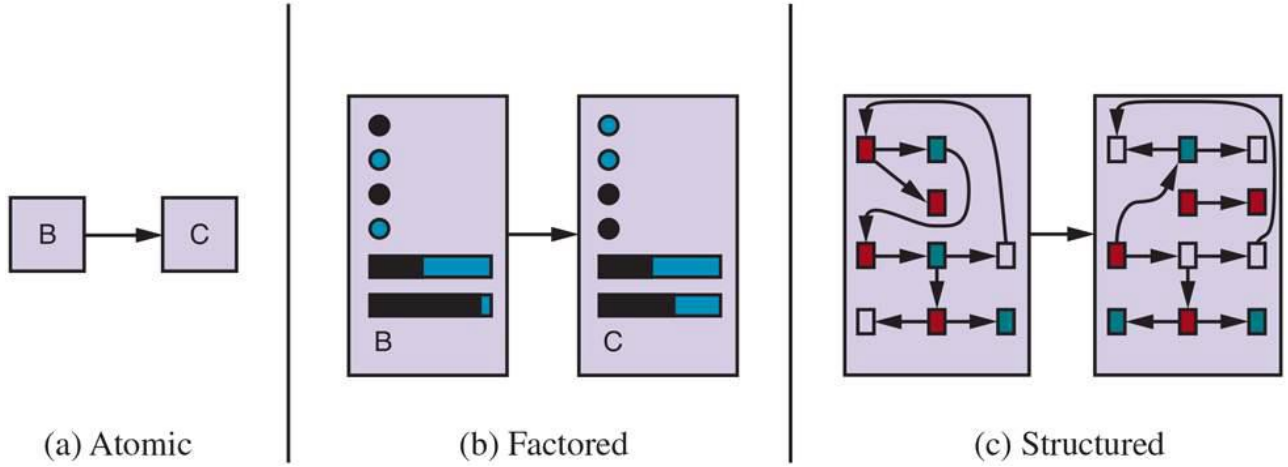
- Used in:
  - Constraint Satisfaction algorithms
  - Propositional logic
  - Planning
  - Bayesian networks
  - Various Machine learning algorithms



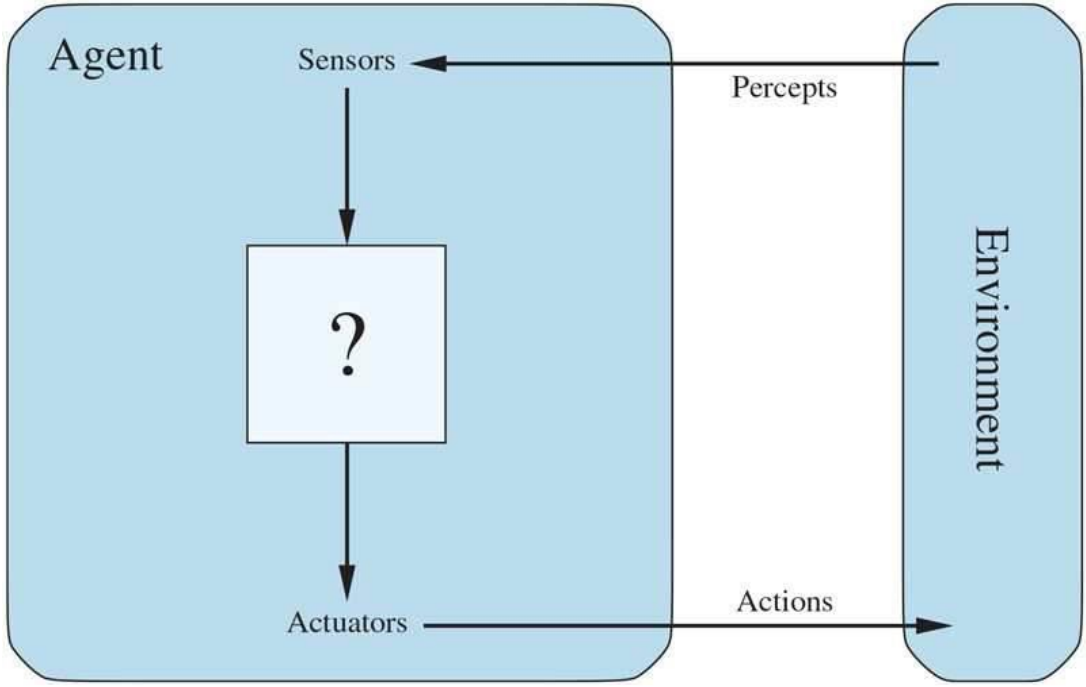
Structured Representation

- Representing various and varying relationships between objects

- Used in:
  - First-order probability models
  - Natural language understanding



Revision | Intelligent Agents



- Agent function, program, architecture
- Percept, percept sequence
- Agent action, behaviour
- Rational agent, Consequentialism, Performance measure
- Omniscience, learning and autonomy
- PEAS (Performance, Environment, Actuators, Sensors)
- Properties of task environment
- Simple reflex agents, Model-based reflex agents, Goal-based agents, Utility-based agents, Learning agents
- Atomic, Factored, Structured representation