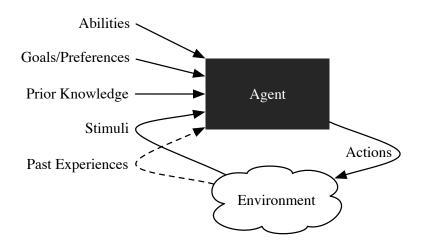
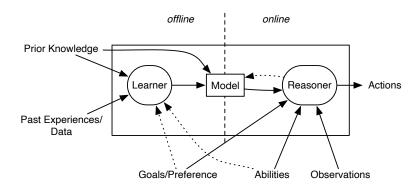
Review: What is Artificial Intelligence?

- Artificial Intelligence is the synthesis and analysis of computational agents that act intelligently.
- An agent is something that acts in an environment.
- An agent acts intelligently if:
 - its actions are appropriate for its goals and circumstances
 - it is flexible to changing environments and goals
 - it learns from experience
 - it makes appropriate choices given perceptual and computational limitations

Review: Agents acting in an environment

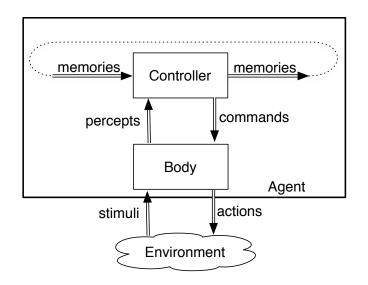


Inside Black Box

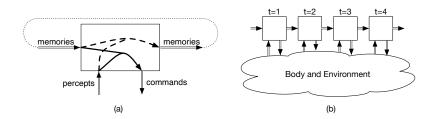




Controller



Functions implemented in a controller

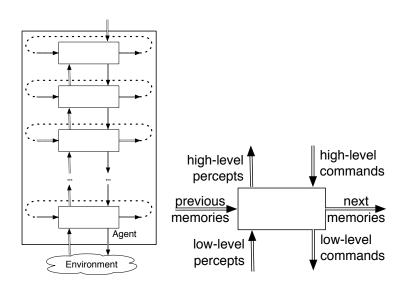


For discrete time, a controller implements:

- belief state function returns next belief state / memory.What should it remember?
- command function returns commands to body.
 What should it do?

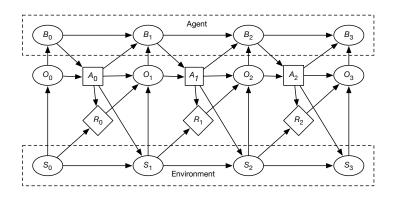


Hierarchical Robotic System Architecture





Partial Observability



 B_i agent's belief state at time i.

 A_i agent's action.

 O_i is what the agent observes.

 R_i is the reward.

 S_i is the world state.

7/7