

Academic AI vs. Game AI

Based on the book
"Programming Game AI by Example"

Presented at the GTMSSIG Meeting on 08/07/2013

Peer-Olaf Siebers

Academic AI vs. Game AI

- Academic researchers: Try to solve a problem optimally with less emphasis on hardware and time limitations
 - Strong AI: Concerns itself with trying to create systems that mimic human thought processes
 - Weak AI: Concerns itself with applying AI technologies to the solution of real world problems
- Games: Programmers have to work with limited resources

This also applies to ABS in OR but perhaps
not to ABS in Economics

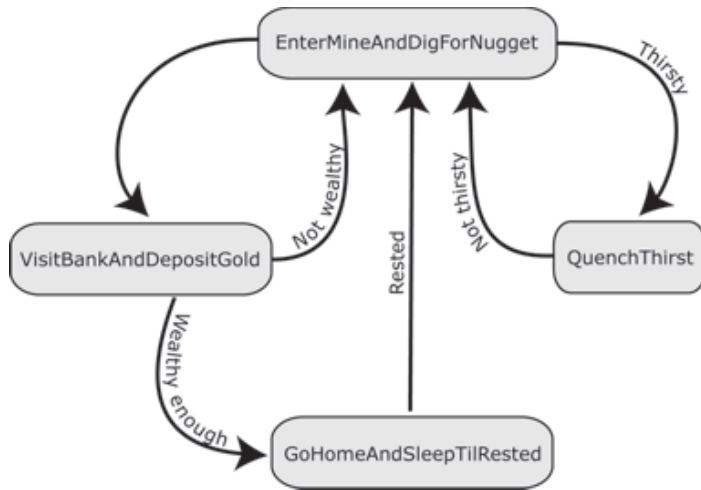
Game AI

- Game AI must be entertaining and to achieve this must often be designed to be suboptimal (natural).
- To be enjoyable Game AI must put up a good fight but lose more often than win.
- The goal is to design agents that provide the illusion of intelligence, nothing more.
- It has also been shown that a player's perception of the intelligence of a game agent can be considerably enhanced by providing the player with some visual and/or auditory clues as to what the agent is thinking about

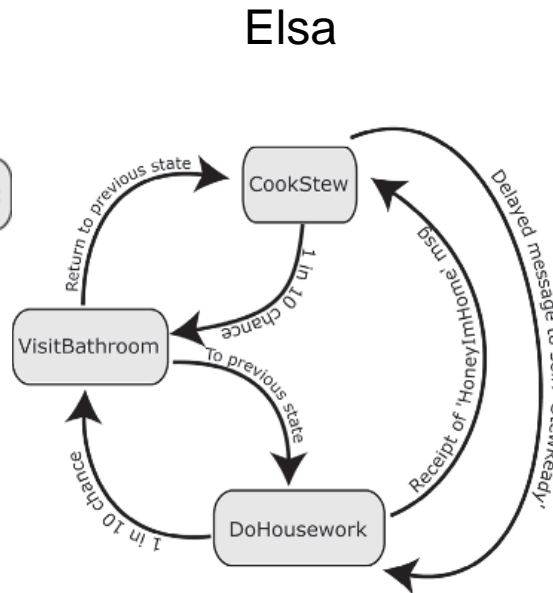
Finite State Machines

- Finite State Machines (FSM) = State-Driven Agent Design

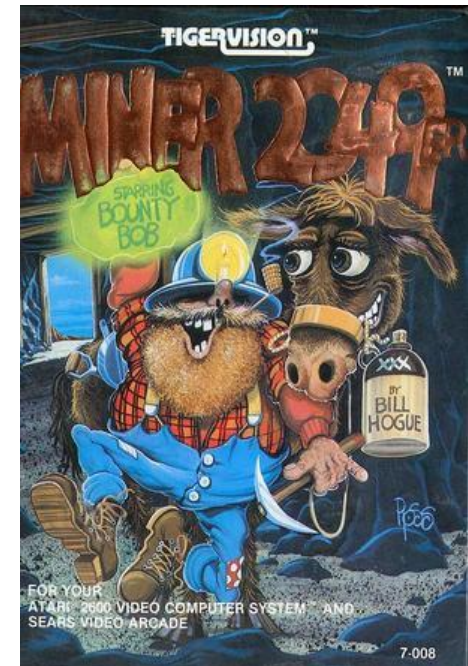
Can we use this term to distinguish different types of agents (e.g. OR and Economics agents)?



Bob



Elsa



Finite State Machines

- Advantages
 - Quick and easy to code
 - Easy to debug: Agent behaviour is broken down into manageable chunks add tracer code to each state
 - Have little computer overhead: As they follow hard-coded rules
 - They are intuitive: We think about things being in one state or another; it is easy to break down an agent's behaviour into a number of states and to create the rules of manipulating them; can be designed with or by non-programmers
 - They are flexible: Can easily be adjusted and tweaked - by adding new states and rules; they also provide a solid backbone with which you can combine with other techniques such as fuzzy logic and neural networks

Discussion



References

- Buckland (2005) Programming Game AI by Example