(Autonomous is the most important property) Agents

* A computer system or a software program which takes independent actions in response to the environment on behalf of their owners without being directed or interfered with constantly.
* A multi-agent system emerges when multiple autonomous agents interact with each other to achieve a common goal by means of **cooperation**, **coordination** and **negotiation**.
* Week2: Slide 17 – Multiagent systems – addressing certain questions, could relate this with our problem.
* Richer decision-making capabilities and responsibilities.
* Physical instantiation of agents are robots. Agents are classes, robots are objects. But objects perform tasks for free, agents do not.
* Human convenience.
* Week2: Slide 27 – Research issues
* Analogies with AI
* Different views of agents and multi-agents – could see if our domain study fits any of the mentioned views.
* Properties of agents: **autonomy, flexibility** (further divided into – **reactive, proactive and social**), and some more on Week 3: Slide 8. Obviously, an agent system, may or may not have all of these properties. (So could analyse which of these properties the system has)
* Reactivity – reacting to dynamic environment, reacting to events.
* Proactiveness – goal-oriented behaviour, not just reacting to events, identifying the opportunities.
* Social – What brings about the multi-agent systems to life.
* Something called as expert systems, they are however, not aware of their environment or of the world, only store and provide information, real-time expert systems are agents.
* Viewing a task as an AI problem would need us to solve all AI problems, maybe optimisation, weights, bias, convergence, we can think more on this, but agents, they could achieve a lot even with little intelligence, <- important point.

Then the Environment:

* Properties –

Accessible vs Inaccessible, Deterministic vs non-deterministic, episodic vs non-episodic, static vs dynamic, discreet vs continuous

**Agent – function which maps runs to actions, agent (function) decides what action to perform**

**System – A pair of agent and environment.**

Something called as perception *see* function, to perceive the environment.

Have agents **do** **what** we ask them **without** telling them **how** to do it.

UTILITY <- maximize