COMS 4701-2 Tutorial 1

1. Give five examples of activities which require intelligence in humans.

2. For each of the following activities, say (with justification), whether or not they require intelligence:

   (a) cracking an egg into a bowl to make an omlette;

   (b) riding a bicycle;

   (c) solving differential equations;

   (d) writing a computer program;

   (e) playing table tennis.

3. Some author object to “the very idea” of AI — or at least, to the idea of *strong* idea — the claim that computers can be made indistinguishable from humans. One objector is the philosopher John Searle. He put forward the *Chinese room* scenario, which goes as follows:

   > Imagine someone is sitting in a room, able to communicate with the outside world only be a small letterbox, through which they can send and receive notes. People outside the room pass him questions in Chinese, and he is expected to pass out responses. Unfortunately, he doesn’t know any Chinese. What he does have is a set of rules, written down on cards in the room. He blindly follows these rules, and they generate English sentences in response. When the rules tell him to pass out these sentences, he does so.

   Searle claims that the Chinese room illustrates why machines will never be intelligent. His claim is based on the fact that the man in the example is clearly not being intelligent, but the Chinese room would pass the Turing test.

   (We can sum up the Chinese room example in the slogan *syntax does not give semantics*.)

   Is Searle right? Why?

4. "Surely computers cannot be intelligent. They can only do what programmers tell them."

   Is the latter statement true? If so, does it imply the former?

5. What questions would *you* ask if you were a judge in the Turing test. Why?

6. Classify each of the following environments

   (a) email manager agent;
   (b) WWW server;
   (c) R1/XCON (configuring DEC VAX's);
   (d) office cleaning robot;
   (e) chemical processing plant controller.

   as

   - Accessible *vs* inaccessible
   - Deterministic *vs* non-deterministic
   - Episodic *vs* non-episodic
   - Static *vs* dynamic
   - Discrete *vs* continuous