Outline for January 8, 2007

1. Greetings and Felicitations!
2. Miscellaneous points
   a. Copy flag and right
   b. *Own* as a special right
   c. Principle of attenuation of privilege
3. What is the safety question?
   a. An unauthorized state is one in which a generic right $r$ could be leaked into an entry in the ACM that did not previously contain $r$. An initial state is safe for $r$ if it cannot lead to a state in which $r$ could be leaked.
   b. Question: in a given arbitrary protection system, is safety decidable?
   c. Theorem: there is an algorithm that decides whether a given mono-operational system and initial state is safe for a given generic right.
4. General case: It is undecidable whether a given state of a given protection system is safe for a given generic right.
   a. Represent TM as ACM
   b. Reduce halting problem to it
5. Take-Grant
   a. Counterpoint to HRU result
   b. Symmetry of take and grant rights
   c. Islands (maximal subject-only $tg$-connected subgraphs)
   d. Bridges (as a combination of terminal and initial spans)