Outline for May 4, 2000

1. Greetings and felicitations!
2. MULTICS ring mechanism
   a. MULTICS rings: used for both data and procedures; rights are REWA
   b. (b1, b2) access bracket - can access freely; (b3, b4) call bracket - can call segment through gate; so if a's access bracket is (32,35) and its call bracket is (36,39), then assuming permission mode (REWA) allows access, a procedure in:
      rings 0-31: can access a, but ring-crossing fault occurs
      rings 32-35: can access a, no ring-crossing fault
      rings 36-39: can access a, provided a valid gate is used as an entry point
      rings 40-63: cannot access a
   c. If the procedure is accessing a data segment d, no call bracket allowed; given the above, assuming permission mode (REWA) allows access, a procedure in:
      rings 0-32: can access d
      rings 33-35: can access d, but cannot write to it (W or A)
      rings 36-63: cannot access d
3. Propagated access control lists
4. Discretionary AC Attacks: Trojan Horse
   a. overt - example edit a file
   b. covert - example delete all files
   c. a type of malicious logic (discuss this)
5. Approaches
   a. Limited Protection Domain: (sandboxing)
   b. Name-checking subsystem; catches accesses not in pattern (startup, .asm, .obj)
   c. Other approaches