January 23, 2019 Outline

Reading: *text*, §5.1–5.2.1   **Assignments:** Homework 1, due January 23

1. Review simulation of 3-parent joint create with 2-parent joint create
2. Bell-LaPadula Model: intuitive, security classifications only
   a. Lattice: poset with $\leq$ relation reflexive, antisymmetric, transitive; greatest lower bound, least upper bound
   b. Apply lattice
      i. Set of classes *SC* is a partially ordered set under relation *dom* with *glb* (greatest lower bound), *lub* (least upper bound) operators
      ii. Note: *dom* is reflexive, transitive, antisymmetric
      iii. Example: (A,C) *dom* (A',C') iff $A \leq A'$ and $C \subseteq C'$;
           $lub((A,C),(A',C')) = (max(A,A'), C \cup C')$; and
           $glb((A,C),(A',C')) = (min(A,A'), C \cap C')$
   c. Simple security condition (no reads up), *-property (no writes down), discretionary security property
   d. Basic Security Theorem: if it is secure and transformations follow these rules, it will remain secure
   e. Maximum, current security level