January 19, 2022 Outline

Reading: text, §A, 5–5.2

Assignments: Homework #1, due January 19 Project Selection, due January 21

Module 17

- 1. Lattices
 - (a) Poset with \leq relation reflexive, antisymmetric, transitive; greatest lower bound, least upper bound
 - (b) Examples

Module 18

- 2. Bell-LaPadula Model: intuitive, security classifications only
 - (a) Level, categories, define clearance and classification
 - (b) Simple security condition (no reads up), *-property (no writes down), discretionary security property
 - (c) Basic Security Theorem: if it is secure and transformations follow these rules, it will remain secure

Module 19

- 3. Bell-LaPadula Model: intuitive, now add category sets
 - (a) 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: $(A, C) \ dom \ (A', C') \ iff \ A \le A' \ and \ C \subseteq C';$ $lub((A, C), (A', C')) = (max(A, A'), C \cup C');$ and $glb((A, C), (A', C')) = (min(A, A'), C \cap C')$
 - (b) Simple security condition (no reads up), *-property (no writes down), discretionary security property
 - (c) Basic Security Theorem: if it is secure and transformations follow these rules, it will remain secure
- 4. Maximum, current security level
- 5. Example: Trusted Solaris