

January 20, 2021 Outline

Reading: *text*, §5–5.2

Assignments: Homework #1, due January 22
Project selection, due January 22

Module 16

1. Lattices

- (a) Properties of a lattice
- (b) Examples

Module 17

2. Bell-LaPadula Model: intuitive, security classifications only

- (a) Show level, categories, define clearance and classification
- (b) Lattice: poset with \leq relation reflexive, antisymmetric, transitive; greatest lower bound, least upper bound
- (c) 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
 $glb((A, C), (A', C')) = (min(A, A'), C \cap C')$
- (d) Simple security condition (no reads up), *-property (no writes down), discretionary security property
- (e) Basic Security Theorem: if it is secure and transformations follow these rules, it will remain secure
- (f) Maximum, current security level