Software Measurement

Big and Lack of Cohesion
Representational TOM

- empirical relation system
  - (C,R)
- numerical relation system
  - (N,P)
- M maps (C,R) to (N,P)
- representation condition
  - $x < y \implies M(x) < M(y)$
We want to measure people as BIG
  – i.e. height and weight
Empirically, if two people are the same height, the heavier is bigger
if two people are the same weight, the taller is bigger
BIG numerical

- Tuple: <ht, wgt>

- Relationship
BIG scale type
BIG monotonicity
BIG Representation Condition
BIG other mappings
LCOM

Lack of Cohesion in Methods
Metric 6: LCOM

- Lack of Cohesion in Methods
- Let \( I_i \) be the set of instance variables used by method \( i \)
- Let \( P \) be set of pairwise null intersections of \( I_i \)
- Let \( Q \) be set of pairwise nonnull intersections
- \( LCOM = \max( |P| - |Q|, 0 ) \)
What Abstraction?

- Needs to highlight which attributes are used by which functions
Mapping to Abs

- How does class get mapped to abstraction?
What transformations?

- Add an attribute
- Add a statement with attribute ref
- Add a statement without attribute ref
- Add a function
Mapping Abs to Ans

- What is the mapping from the abstraction to the answer set?
Rep Condition

- Does the mapping between the partial order on the abstraction and the answer set satisfy the representation condition (one way)?
Scale Types

- Which scale type is implied by the transformations, abstraction and mapping?