CIS 746
Software Measurement

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Did you measure anything yesterday?
Why did you measure it?
How did you use the measurement?
Was it a GOOD measure?
How do you decide if it is a good measure?
What properties do you want your measure to have?
What is measurement?
Course Purpose

- introduction to terminology
- understanding of concepts
- software measurement theory
- experience in developing measures
- OR
- answer those questions for software
Course Conduct

- Lectures
  - TWR 9:00-11:15
- Interactive sessions
  - T 7:00PM - 10:00PM
- Articles
  - you are responsible for reading assigned pages
- Assignments, 2 exams, 2 papers
Interactive Sessions

- Tuesdays, 7PM-10PM
  - starting June 25
- Discussion question/topic/task posted on web page
- Send email comments, etc
- I will post on web page
Exams

- one midterm (150 points each)
- one final (200 points) – July 25
- crib sheets
  - 8.5 by 11 inches
  - handwritten
  - turn in with exam
  - 1 for midterm, 2 for final
Information

- www - course web page
  - Announcements
  - Lectures (tegrity)
  - interactive sessions
  - syllabus
  - grades through KS Online grade system
Course Grading

- Grade based on total points
  - homework, 2 exams, final, projects
- 90% or above - A
- 80% or above - B
- Late Assignments
  - 10% after start of class
  - 10% each additional day
Questions

- send email - dag@cis.ksu.edu
Reading Assignment for Wed

Lord Kelvin

- It isn’t science unless you can measure it
- If we want to make software engineering a science (or an engineering discipline), we need to be able to quantify attributes of the software product and the software development process
Measurement (see article)

- Measurement is the process of assigning numbers or symbols to entities based on some attribute or property of the entity.
Software Engineering

- Do you know how many lines of code you write per day (on the average)?
- Do you know how many errors per day you produce?
- Do you know the complexity of your last program?
- Do you know the quality of your programs?
Measurement examples

- People's height
- Temperature
- Number of marbles
- Numbers on uniforms
- Rank in class
Measurement Scales (see article)

- Nominal
- Ordinal
- Interval
- Rational
- Absolute
Measure vs Prediction

- **measure**
  - mapping entity to number

- **prediction system**
  - measure
  - math model (or formula)

» mapping measure to prediction
Representation Condition

- See article
Complexity

- vague notion
- relies on intuition
- related to
  - readability
  - understandability
  - maintainability
  - quality
- over used