1.00 Lecture 16

Design Lab I

Reading for next time: Big Java: sections 2.11-2.13, 3.9

Design Lab

- **Focus is on problem formulation and design of classes (data members and methods)**
- **No solutions will be given in class**
  - An example solution will be posted at 7pm tonight on the Web site
- **Ask a lot of questions as you work through the lab**
  - We encourage you to work with someone else
- **You do not have to finish the entire program**
  - The emphasis is on the design choices and early stages of implementation

Exercise

- **Model the following:**
  - A building contains a number of classrooms, faculty offices, and labs. It has a building number.
  - Each classroom has a number of seats, a number of power outlets,
    - And possibly a computer projector. Model this only if you have time at the end.
  - Each faculty office holds two people (faculty and administrator) and has a number of power outlets
  - Each lab holds a number of people and has a number of power outlets
    - And possibly lab equipment. Model this only if you have time at the end.
  - Each room (classroom, office, lab) has a number.
  - The building has a wireless LAN.

Exercise, p. 2

- **Create methods, as appropriate, to:**
  - Give the maximum number of people in the building.
    - Assume maximum classroom occupancy is the number of seats
  - At 10 seconds per occupant, give the evacuation time.
  - At 50 users per wireless LAN access point, give the number of access points needed
  - Give the number of power outlets in the building.
  - At 5 amps per outlet, projector, and wireless access point, and 20 amps per piece of lab equipment, give the total power required in the building
    - Model the projector and lab equipment power only if you have time at the end

Exercise, p.3

- **Write a test class with a main() method to:**
  - **Create one or more buildings**
  - **For each building:**
    - **Create one or more of each room type, with appropriate data**
    - **Output the total power, LAN access points, evacuation time and number of people/seats**

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