**Administrivia**

- Web-site updates:
  - Sample programs page has stack and queue classes from last time.
  - “Useful links” page has info about Eclipse.
  - “Java Without An IDE” (linked from “Useful links”) has info about generating HTML documentation from the command line.
- Exam 1 next Tuesday. Open book, open notes, “open browser” (Java API only). Review sheet on Web soon.
  
  Could reschedule for next Thursday if all agree.

**Recap — ADTs, Array-Based Stacks and Queues**

- Abstract data type — define possible ‘values’, list of operations. Could capture as Java interface.
- Stack ADT — FIFO queue.
- Queue ADT — LIFO queue.
- Array-based implementations:
  - Stacks easy, queues somewhat trickier (“circular queue”).
  - General approach — decide what variables we need, what they should “mean”.
  - Error checking — Java-esque way is with “exceptions” (more later).
  - Include `main` method for simple error checking.

**General Homework Hints**

- “Links” — a way to teleport player or other entity from one spot to another. Make this work via methods of Block and GameEntity interfaces.
- Some helpful tools — “screen editor” for laying out screens, “image editor” for drawing images. Or can use ImageIcon library class and GIF files.

**Homework 3**

- What you will implement for this round — mostly, a “player” class (implementing Player) such that:
  - Player interacts with various kinds of blocks in the right way for your game.
  - Player responds to keyboard or mouse input in the right way for your game.
- Helpful hints:
  - Player defines some constants you should use.
  - You will implement KeyListener or one/botn of the mouse-listener interfaces.
  - Most logic will go in `update`, `getUpdateTime`, and the listener methods.
  - What variables will you need?
Lists

- List ADT:
  - "Values" are lists of elements.
  - Many operations possible — add element, remove element, search for element, etc., etc.

- Implementation:
  - Using an array.
  - Using a "linked list".

Minute Essay

- What's giving you the most trouble with the course so far?