Slide 1

Administrivia

- Reminder: Homework 2 code due today.
- Due dates for Homework 3 posted: design Thursday, code next Tuesday.

Slide 2

Homework 3

- In this homework you start writing code for your player, to replace the stick figure in the starter game.
- Key parts of this assignment are making the player
  - interact with different kinds of blocks.
  - move in response to keyboard or mouse input from human player.

  (If these don't apply to your game, talk to me about whether there are reasonable substitutes.)

  For design phase, you just need to describe this interaction.

Slide 3

Homework 3, Continued

- `Player` defines some constants you should use.
- You will implement `KeyListener` or one/both of the mouse-listener interfaces. When you do this, the framework will deliver key and/or mouse “events” to you.
- Most logic will go in `update`, `getUpdateTime`, and the listener methods.
- (More next time.)

Slide 4

Recap — ADTs, Array-Based Stacks and Queues

- Abstract data type — define possible “values”, list of operations. Could capture as Java `interface`.
- Stack ADT — LIFO queue.
- Queue ADT — FIFO 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 about them later).
  - Include `main` method for simple error checking.

Slide 5

Lists

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

    (Also “walk through elements” with “iterator” — next time.)
- Implementation:
  - Using an array.
  - Using a “linked list”.

  How do these compare with regard to efficiency of various operations? efficiency of memory use?

Slide 6

Linked Lists

- Think about implementing some basic list operations (add, remove, find) using a linked list. First, draw pictures . . .
- Then think about what you need to turn the pictures into code. Probably you’ll need:
  - Variables (e.g., something to point to the first “node” (little box).
  - Classes-within-the-class (for nodes / little boxes, iterators).
  - Methods for interface.
- (Sketch code at board.)

Slide 7

Minute Essay

- None — quiz.