

## CS1007 lecture #18 notes

tue 12 nov 2002

- news
- GUIs
- events
- reading: ch 9.6-9.8

cs1007-fall2002-sklar-lect18

1

## GUIs (1).

- Graphical User Interface
- topics:
  - components
  - containers
  - layout managers
  - events
  - listeners

cs1007-fall2002-sklar-lect18

2

## GUIs (2).

- *components*
- a component is a building block of any GUI
- here are some examples:
  - Label
  - TextField, TextArea
  - PushButton
  - CheckBox
  - RadioButton
  - ComboBox
  - List
  - PulldownMenu
  - ... and many more!!

cs1007-fall2002-sklar-lect18

3

## GUIs (3).

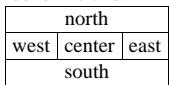
- *containers*
- a container is a special component that can hold other components
- here are some examples:
  - Applet
  - Frame
  - Panel

cs1007-fall2002-sklar-lect18

4

## GUIs (4).

- *layout managers*
- a layout manager describes where the components are laid out within a given container
- you need to “set” the layout manager for each container
- you can “nest” containers (and their layout managers)
- `BorderLayout` — simplest layout manager
- looks like this:



cs1007-fall2002-sklar-lect18

5

## events (1).

- an *event* represents some action on the part of the user
- user-generated events are entered either through the *mouse* or the *keyboard*
- examples:
  - mouse pressed
  - mouse released
  - mouse clicked
  - mouse entered
  - mouse exited
  - mouse moved
  - mouse dragged

cs1007-fall2002-sklar-lect18

6

## listeners (1).

- a *listener* is a part of a program that captures these events for processing in the program
- frequently, a *listener interface* is created
- for example, `java.awt.event.MouseListener`:
  - `void mousePressed( MouseEvent evt );`
  - `void mouseReleased( MouseEvent evt );`
  - `void mouseClicked( MouseEvent evt );`
  - `void mouseEntered( MouseEvent evt );`
  - `void mouseExited( MouseEvent evt );`
- what is a `MouseEvent`?
  - `Point getPoint();`
  - `int getX();`
  - `int getY();`
  - `int getClickCount();`

cs1007-fall2002-sklar-lect18

7

## listeners (2).

- `MouseListener` examples:
  - `Dots.java`
  - `Dots2.java`
  - `Dots3.java`

cs1007-fall2002-sklar-lect18

8

listeners (3).

- another example, `java.awt.event.KeyListener`:
  - `void keyPressed( KeyEvent evt );`
  - `void keyReleased( KeyEvent evt );`
  - `void keyTyped( KeyEvent evt );`
- what is a `KeyEvent`?
  - `char getKeyCode();`

listeners (4).

- `KeyListener` examples:
  - `Dots4.java`
  - `Dots5.java`