# LECTURE 4: EVENT HANDLING

Today

- Reading
  - JS Ch. 3 (Vectors) and Ch. 4 (Generics)

- Objectives
  - More Java Graphics
  - Java Events

Reminders

- Friday quizzes
  - 5-8 minutes, 2-3 questions
  - easy to answer if you've done reading and come to class

- Our first lab is today!

- Our current pace
  - Review for some, not for others
  - Don't panic

PostIt Application

- JFrame contains two JPanels: canvas and buttons
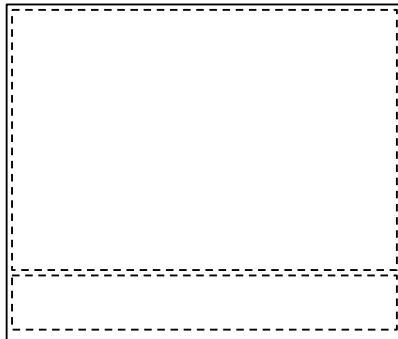
- DrawingCanvas extends JPanel
  - Registers a MouseListener and a MouseMotionListener
  - Implemented as inner classes

- Buttons held in JPanel
  - Top-level class PostItApplication implements ActionListener

Listeners

- The system monitors the component waiting for something to happen
  - When something happens, the system calls the appropriate method in the listener class

- For each component, must tell the system who the listener is
  - Called "registering a listener"

Registering a Listener

- To react to mouse press, click, or release
  - addMouseListener(listener) in constructor of component

- To react to mouse motion/draggin
  - call addMouseMotionListener(listener) in constructor of component

- For JButton, JComboBox, etc
  - object.addActionListener(listener)

The Listener Class Must Contain...

- MouseListener
  - mousePressed(evt), mouseReleased(evt), mouseClicked(evt)

- MouseMotionListener
  - mouseDragged(evt), mouseMoved(evt)

- actionListener
  - actionPerformed(evt)

The Listener Class Must Contain...

How to ensure listener class actually implements
the appropriate method?!

Mouse Listener

- The listener must either
  - implement MouseListener interface
  - extend MouseAdapter

- For mouse motion, the listener must either
  - implement MouseMotionListener
  - extend MouseMotionAdapter