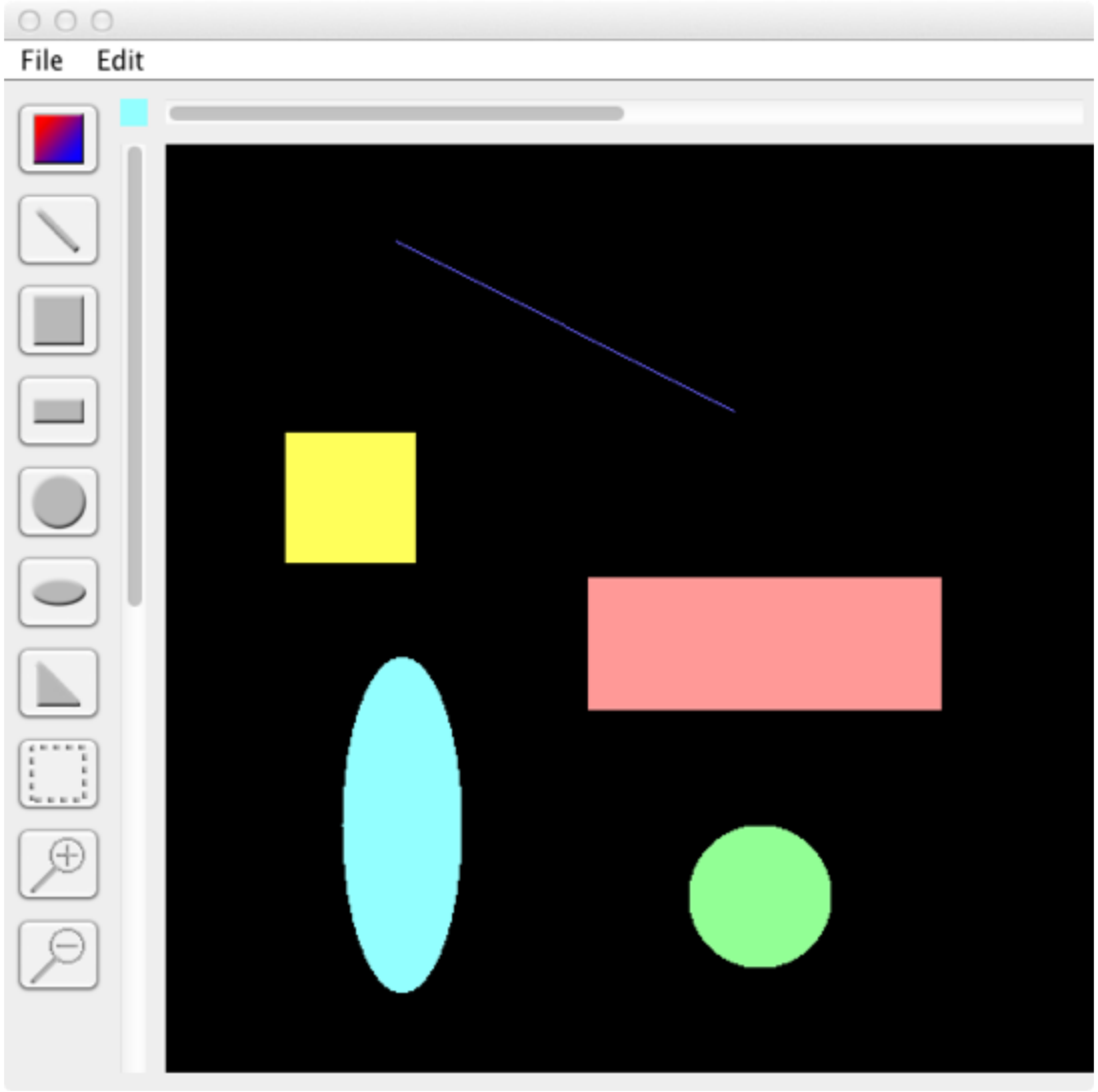
GUIs, Events, MVC

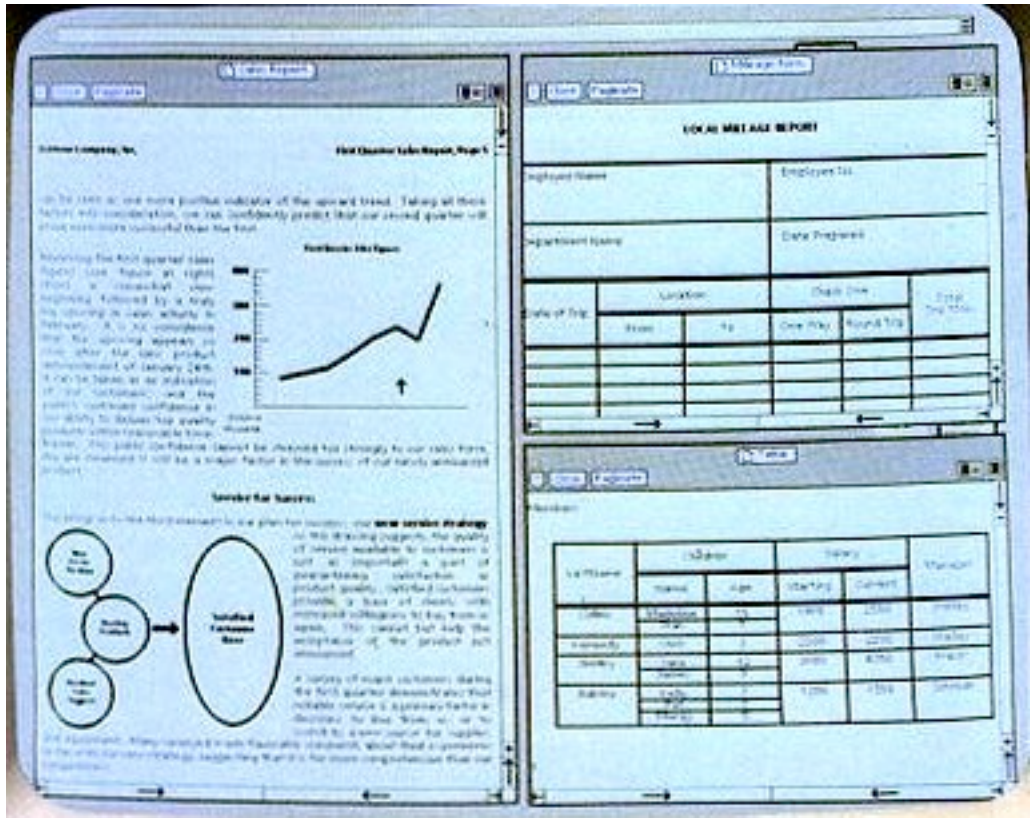
CS 355: Interactive Graphics and Image Processing

Lab #1 Preview



Review: GUIs

- Let the user drive the conversation
    - Avoid “modal” interaction
    - You respond to them
- *Event-driven programming*



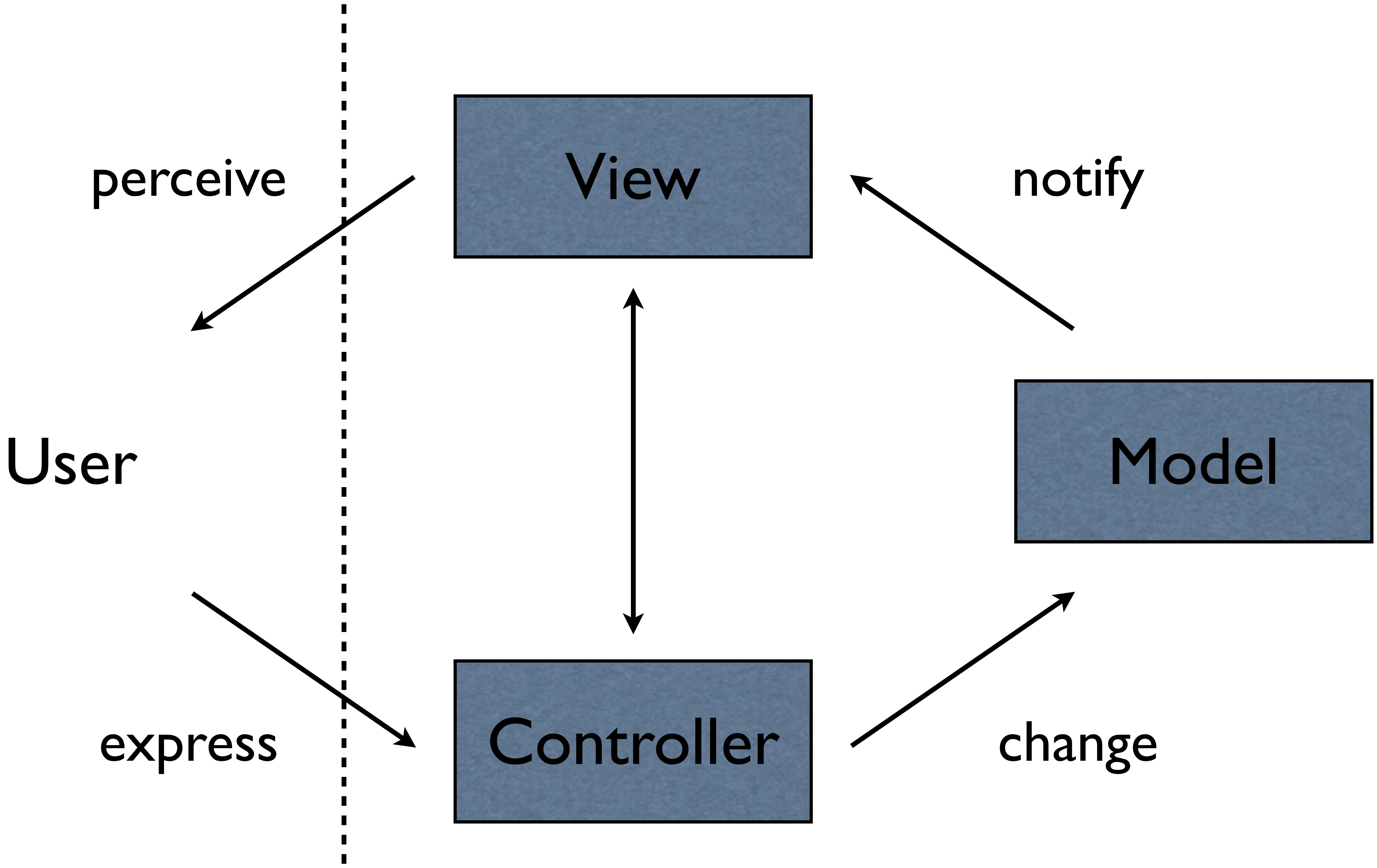
Events

- GUIs get lots of user "events":
  - Mouse down, mouse up, mouse move
  - Menu selection
  - Scrolling
  - and many more ...
- The program needs to respond to the event, do the corresponding action, and update display

Event-Driven Programming

- Event "handlers" that respond accordingly
- May register themselves as "listeners": lets system know who to send events to
- May pass on events to other objects/handlers
- Multiple listeners for same events
- Useful in lots of contexts besides GUIs

Model-View-Controller



perceive

View

notify

User

Model

express

Controller

change

Lab #1

```
GUIFunctions.createCS355Frame(null,null,null,null)
```

- Controller (implements CS355Controller interface
- View (implements ViewRefresher interface)
- a MouseListener
- a MouseMotionListener

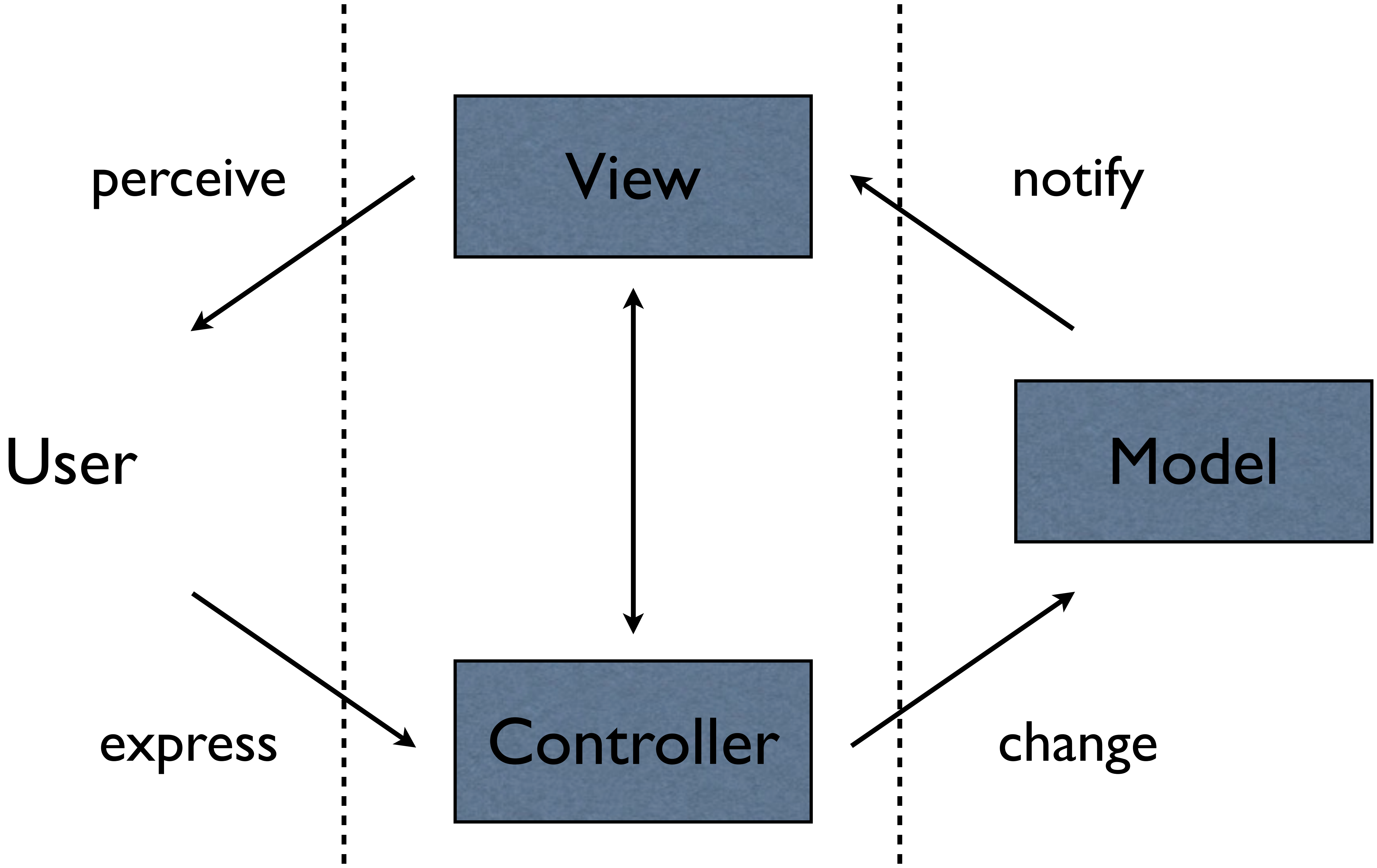
Lab #1- Model

- No shell or interface given for model
- See the lab specifications
  - A parent `Shape` class (stores color only)
  - A list of `Shape` objects in back-to-front order
  - Child classes for each shape

Lab #1- Model

- How you store the model is independent of
  - How you draw the view
    (View's job)
  - How the user provides the input
    (Controller's job)
- No drawing or event-handling code in the model!

Model-View-Controller



Next time...

- Coordinate systems
- Drawing