Event-driven Programs

Event-driven Programs

- When users interact with computer they generate events (e.g., moving/clicking the mouse, typing, etc.)
- Can respond to events by having **listener** for events
  - `addMouseListeners()`
  - `addKeyListerners()`
- Use Java library the deals with events:

```
import java.awt.event.*;
```

- Methods of a listener get called *asynchronously* when events occur

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Responding to Mouse Events

- General steps:

1. `init` or `run` method should call `addMouseListeners`
2. Write definitions of any listener methods needed

`mouseClicked(`*e*`)`	Called when the user clicks the mouse
`mousePressed(`*e*`)`	Called when the mouse button is pressed
`mouseReleased(`*e*`)`	Called when the mouse button is released
`mouseMoved(`*e*`)`	Called when the user moves the mouse
`mouseDragged(`*e*`)`	Called when the mouse is dragged with the button down

The parameter *e* is `MouseEvent` object, which provides more data about event, such as the location of mouse.

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Responding to Keyboard Events

- General steps:

1. `init` or `run` method should call `addKeyListeners`
2. Write definitions of any listener methods needed

`keyPressed(`*e*`)`	Called when the user presses a key
`keyReleased(`*e*`)`	Called when the key comes back up
`keyTyped(`*e*`)`	Called when the user types (presses and releases) a key

The parameter *e* is a `KeyEvent` object, which indicates which key is involved.

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MouseTracker Example