GUI Components, Containers, and Layout

- `add(...)`
  - What components?
  - Where do they go?
  - How are they nested

Set Location
Not very flexible

Want: Algorithm for laying out the components in a container
One option: Different types of containers
Better: "plug in" the algorithm -> Layout Manager
Border layout

What's your favorite ... ?

text field
GridBagLayout example (from GUILayoutExample.java)

layout will fill empty space

empty rows are taken out

relationships are preserved

Result:
Lab 1

JavaBeans.PropertyChangeSupport

My Model

- Model/View interaction:

```java
MyView extends JPanel implements PropertyChangeListener {

    MyModel m;
    MyView (MyModel m) {
        this.m = m;
        m.addPropertyChangeListener(this);
        update();
    }

    void update() {
        looks & state of model &
        displays visualization of it
    }

    public void propertyChanged (PropertyChangeEvent pce) {
        update();
    }

    ...
}
```