How the User Interface Works

This simple interface consists of two parts: the left side, which selects the garden type, and the right side, which selects the plant category. When you click on one of the garden types, this causes the program to return a type of garden that depends on which button you select. At first, you might think that we would need to perform some sort of test to decide which button was selected and then instantiate the right Concrete Factory class. However, a more elegant solution is to create a different ItemListener for each radio button *as an inner class* and have each one create a different garden type.

First, we create the instances of each Listener class.

```
Veggie.addItemListener(new VeggieListener());
Peren.addItemListener(new PerenListener());
Annual.addItemListener(new AnnualListener());
```

Then we define the actual inner classes.

```
class VeggieListener implements ItemListener {
    public void itemStateChanged(ItemEvent e) {
        garden = new VeggieGarden();
        clearPlants();
    }
}
//--------------
class PerenListener implements ItemListener {
    public void itemStateChanged(ItemEvent e) {
        garden = new PerennialGarden();
        clearPlants();
    }
}
//--------------
class AnnualListener implements ItemListener {
    public void itemStateChanged(ItemEvent e) {
        garden = new AnnualGarden();
        clearPlants();
    }
}
```

Thus when a user clicks on one of the plant type buttons, the plant type is returned, and the name of that plant is displayed.

```
public void actionPerformed(ActionEvent e) {
    Object obj = e.getSource();
    if(obj == Center)
       setCenter();
    if(obj == Border)
       setBorder();
    if(obj == Shade)
       setShade();
```