

ADVANCED GUIS

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Overview

- ▣ Processing Text input/output
 - JTextField, JTextArea
- ▣ Choices
 - JRadioButton
 - JCheckBox
 - JComboBox
- ▣ Menus
 - JMenuBar → JMenu → JMenuItem
- ▣ More awesome swing GUI components

Text Processing

- ▣ `JTextComponent`: extended by:
 - `JTextField` → One line of text
 - `JTextArea` → Multiple lines of text (no scrolling)
 - But, implements the `Scrollable` interface
- ▣ Methods inherited from `JTextComponent`:
 - `getText()`, `getText(int offset, int length)`
 - `getSelectedText()`
 - `isEditable()`
 - `setEditable(boolean b)`
 - `copy()`, `cut()`, `paste()`, `setText(String t)`, `setMargin(Insets margins)`, etc. etc.

JTextArea

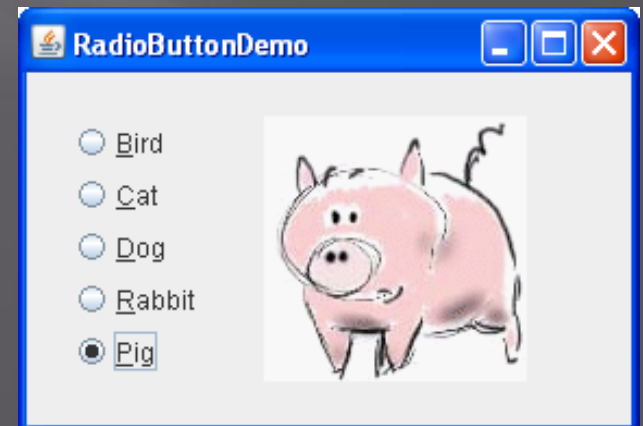
- ▣ Constructed with number of rows/columns
 - `new JTextArea(int numRows, int numCols)`
- ▣ Can be used for output or input
 - `setEditable(false)` for pure output
 - `append(String text)` can still be used to add to the end of a non-editable `JTextArea`
- ▣ No innate scrolling functionality
 - Create a `JScrollPane` containing the `JTextArea`
 - `new JScrollPane(new JTextArea(r,c))`

Choices

- ▣ JRadioButton – For mutually exclusive choices
 - Use a ButtonGroup to group buttons
 - ▣ With ButtonGroup, all other buttons turn off when one is selected... a perfect choice for radio buttons!
 - Can attach an ActionListener

(Picture and excerpt of example code using JRadioButton from <http://download.oracle.com/javase/tutorial/uiswing/components/button.html>)

```
JRadioButton birdButton = new JRadioButton(birdString);  
JRadioButton catButton = new JRadioButton(catString);  
.....  
ButtonGroup group = new ButtonGroup();  
group.add(birdButton);  
group.add(catButton);  
.....
```



More Choices

- ▣ JCheckBox – for any “toggle” type choice
 - No need to put into a ButtonGroup
 - `new JCheckBox(String text)`
 - Also can attach an `ActionListener`

- ▣ Method for JCheckBox and JRadioButton
 - `boolean isSelected()`

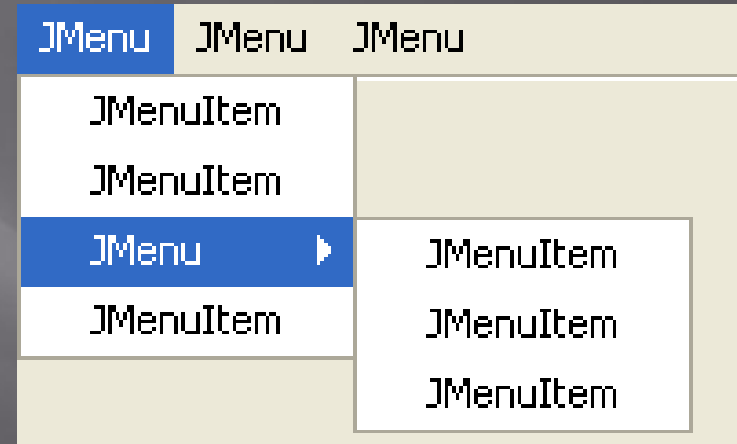
Even More Choices

- ▣ JComboBox – For selecting from many choices
 - Use `addItem(String text)` to add a choice
 - Use `setEditable(true)` to let the user type in a selection (`false` to use only predetermined choices)
 - Again, attach an `ActionListener`
 - Use `getSelectedItem()` to get selected item

Menus

▣ The Hierarchy

- JMenuBar - The part that's at the top of the frame
- JMenu - contains JMenuItem or Jmenus
- JMenuItem - Does something on click
 - ▣ Can add an ActionListener



<http://www.formdev.com/jformdesigner/doc/ui/designer/menu-designer/>

More!

- ▣ Look at the swing documentation in the API
- ▣ There are many many many many options to change appearance, functionality, usability, etc.
- ▣ For a sample program, get `SwingSet`
 - A demo in the Java Development Kit
 - Shows various examples of the swing components
 - It even shows the source code!
 - <http://java.sun.com/products/plugin/1.4/demos/plugin/jfc/SwingSet2/SwingSet2.html>
 - Seriously, it's worth it.