Creating CustomItem in Java ME

This article needs to be updated: If you found this article useful, please fix the problems below then delete the {{ArticleNeedsUpdate}} template from the article to remove this warning.

Reasons: trashedDev
(10 Aug 2012)
The full potential of this article isn't available on full-touch devices since this article needs to have a physical number pad.

Overview

This code snippet demonstrates how to create and display custom control. It consist of two files:

1. **CustomControl.java** - Inherited from `MIDlet`, displays the `MyItem` control.
2. **MyItem.java** - Inherited from `CustomItem`.

Custom contol class `MyItem` implements the method `keyPressed()`, which is responsible for storing the last key-pressed code. It also implements the `paint()` method, which displays the last key-pressed code inside the control.

Source file: CustomControl.java

```
import javax.microedition.lcdui.Command;
import javax.microedition.lcdui.CommandListener;
import javax.microedition.lcdui.Display;
import javax.microedition.lcdui.Displayable;
import javax.microedition.lcdui.Form;
import javax.microedition.midlet.MIDlet;


public class CustomControl extends MIDlet implements CommandListener{
    //Main form.

    private Form form;
    private Display display;
    private Command exitCommand;
    private MyItem myItem;

    /**
     * Constructor. Constructs the object and initializes displayables.
     */
    public CustomControl() {
        form = new Form("Custom Control MIDlet.");

        // Add command buttons
        exitCommand = new Command("Exit", Command.EXIT, 1);
        form.addCommand(exitCommand);
        form.setCommandListener(this);

        display = Display.getDisplay(this);
        display.setCurrent(form);

        myItem = new MyItem("Custom control");
        form.append(myItem);
    }

    /**
     * From CommandListener.
     * Called by the system to indicate that a command has been invoked on a
     * particular displayable.
     * @param cmd the command that was invoked
     * @param displayable the displayable where the command was invoked
     */
    public void commandAction(Command cmd, Displayable displayable) {
        if (cmd == exitCommand) {
            notifyDestroyed();
        }
    }

    /**
     * From MIDlet.
     * Called when the MIDlet is started.
     */
    public void startApp() {
        // No implementation required.
    }

    /**
     * From MIDlet.
     * Called to signal the MIDlet to enter the Paused state.
     */
    public void pauseApp() {
        // No implementation required.
    }

    /**
     * From MIDlet.
     * Called to signal the MIDlet to terminate.
     * @param unconditional whether the MIDlet has to be unconditionally
     * terminated
     */
    public void destroyApp(boolean unconditional) {
        // No implementation required.
    }
}
```


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Source file: MyItem.java

```
import javax.microedition.lcdui.CustomItem;
import javax.microedition.lcdui.Font;
import javax.microedition.lcdui.Graphics;

class MyItem extends CustomItem {
    // Last key pressed code.
    private int key;

    /**
     * Constructor.
     */
    public MyItem( String label ){
        super( "" );
    }

    /**
     * From CustomItem.
     * Called by the system to redraw canvas.
     * @param graphics used for drawing operations.
     */
    public void paint(Graphics g, int width, int height) {
        //Display last key pressed.
        String output = "Key code:"+String.valueOf(key);

        g.drawString(output,(width-g.getFont().stringWidth(output))/2,
                            (height-g.getFont().getHeight())/2, 0);

        g.setStrokeStyle(Graphics.DOTTED);
        for (int i= 0;i<(height+width)/10;i++)
        {
            g.setColor(i*10000);
            g.drawRect( 0+i, 0+i, (width-i*2), (height-i*2));
        }
    }

    /**
     * From CustomItem.
     * Called by the system to retrieve minimum width required for this control.
     */
    protected int getMinContentWidth() {
        return 150;
    }

    /**
     * From CustomItem.
     * Called by the system to retrieve minimum height required for this control.
     */
    protected int getMinContentHeight() {
        return 100;
    }

    /**
     * From CustomItem.
     * Called by the system to retrieve preferred width for this control.
     */
    protected int getPrefContentWidth(int arg0) {
        return 200;
    }

    /**
     * From CustomItem.
     * Called by the system to retrieve preferred height for this control.
     */
    protected int getPrefContentHeight(int arg0) {
        return 100;
    }

    /**
     * From CustomItem.
     * Called by the system to redraw canvas.
     * @param graphics used for drawing operations.
     */
    protected void keyPressed(int keyCode) {
        key = keyCode;
        this.repaint();
    }
}
```

Postconditions

After starting the MIDlet, the user will see custom control with the last key-pressed code.

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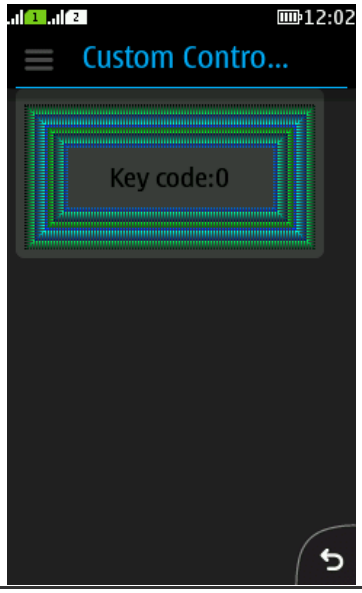

Supplementary material

You can view the source file and executable application in the attached zip archive. The archive is available for download at Media:Creating custom control in J2ME.zip

Related articles:

- Archived:LCDUI CustomItem content remains blank when appended to a Form before setting the Form as current Displayable (Known Issue)
- CustomItem (Java Developers' Library)

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