

Create your own widget

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We explained in a previous topic that it is not recommended to use directly **swing** components as some mechanisms proposed by **GENIUS** (as conditional display or **before/after**) will not be active. Anyway, writing **put(obj)** where obj is a pure **swing** object will even not compile

So, two solutions are available if you do not dispose of the right widget :

1. to create a new high level widget using predefined **GENIUS** widgets ([GComponentList](#) was created in this way).
2. to create a basic widget a bit as [GButton](#) was developped.

Here we are going to explain how to achieve the second solution.

In fact, it is relatively simple ...

How to display the widget:

First, we will have to create a new class extending [GComponent](#) and implementing at least the [GDisplay](#) interface. On the following example, we will create a new class called **GTableList** using the **swing** widget [JTable](#).

As we extend the [GComponent](#) class, we will have to override the [getComponent\(\)](#) method returning the **swing** component corresponding to the widget (here the [JScrollPane](#) which surrounds the [JTable](#)).

Also, as we implement the [GDisplay](#) interface, we will also have to override the [display\(\)](#) method as indicated below.

That is all ...

```
public class GTableList extends GComponent implements GDisplay {

    private JTable      m_JTable;
    private JScrollPane m_JScrollPane; // To get the column names displayed

    private Object[][]  m_data;
    private String[]    m_columnNames;

    public GTableList (Object[][] data, String[] columnNames) {

        super(null);

        m_data = data;
        m_columnNames = columnNames;
        m_JTable = new JTable(m_data, m_columnNames);
```

```

        m_JScrollPane = new JScrollPane(m_JTable);

    }

    @Override
    public void display() {
        doDisplay(this);
    }

    @Override
    public Component getComponent() {
        return m_JScrollPane;
    }
}

```

How to catch a GENIUS event:

To use the [GListener](#) interface and thus, the [before/after](#) mechanism, we will only have to implement one of the listener used by the [swing](#) widget. Here we will take [TableModelListener](#)

So, implementing this interface, we will have to override the [tableChanged\(\)](#) method then adding this listener to [m_JTable](#) as described below. In the following example, we will test if one of the cells have its value changed.

```

public class GTableList extends GComponent implements GDisplay,
TableModelListener {

    private JTable      m_JTable;
    ...

    // Adding the listener
    m_JTable.getModel().addTableModelListener(this);

    @Override
    public void tableChanged(TableModelEvent e) {

        int row = e.getFirstRow();
        int column = e.getColumn();
        TableModel model = (TableModel)e.getSource();
        Object data = model.getValueAt(row, column);
        System.out.println("New data is "+data);

        GEvent gevent = new GEvent();
        processGEvent(gevent, this); // Redirection of the event !

    }

}

```

With the two last lines of code of this implementation, the **swing** event is redirected towards the **GENIUS GListener** mechanism and, in the class calling this new **GTableList** object, we will be able to use the **before/after** methods.

```
private GTableList table;

...

table = new GTableList(data, titles);

...

@Override
public void display() throws GException {
    put(table);
}

...

public void after(GEvent arg0) throws GException {

    if ( arg0.contains(table) ) {
        System.out.println("Data is modified ...");
    }

}
```

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