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GWT + UI Designer: Enterprise Web UIs made easy

Eric Clayberg
May 11, 2011

Hashtags: **#io2011 #DevTools**

Feedback: **http://goo.gl/qWIni**

Agenda

- Introduction
- UI Designer Basics
- Basic UI Designer Demo
- Key UI Designer Features
- Advanced UI Designer Demo
- Wrap-Up
- Q & A

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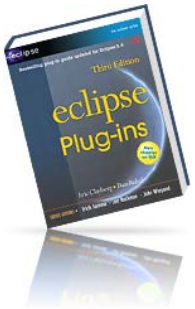
Introduction

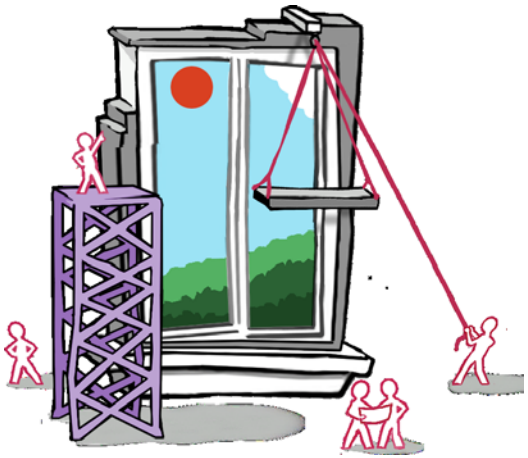
Who am I and what is the UI Designer?

Introduction

Some useful background

- Eric Clayberg
  - Software Engineering Manager, Developer Tools
  - Formerly with Instantiations, a Java/Eclipse tool maker acquired by Google in 2010
  - Co-author of ***Eclipse Plug-ins***
  - Contact at clayberg@google.com
- GWT Designer
  - Created by Instantiations in 2006
  - Acquired by Google in 2010 and released as free
  - Integrated into **Google Plug-in for Eclipse** (GPE) v2.2 as the UI Designer
  - Full version includes support for Ext-GWT (GXT) and SmartGWT (GPE embedded version does not)
  - Based on the WindowBuilder open source project at Eclipse.org





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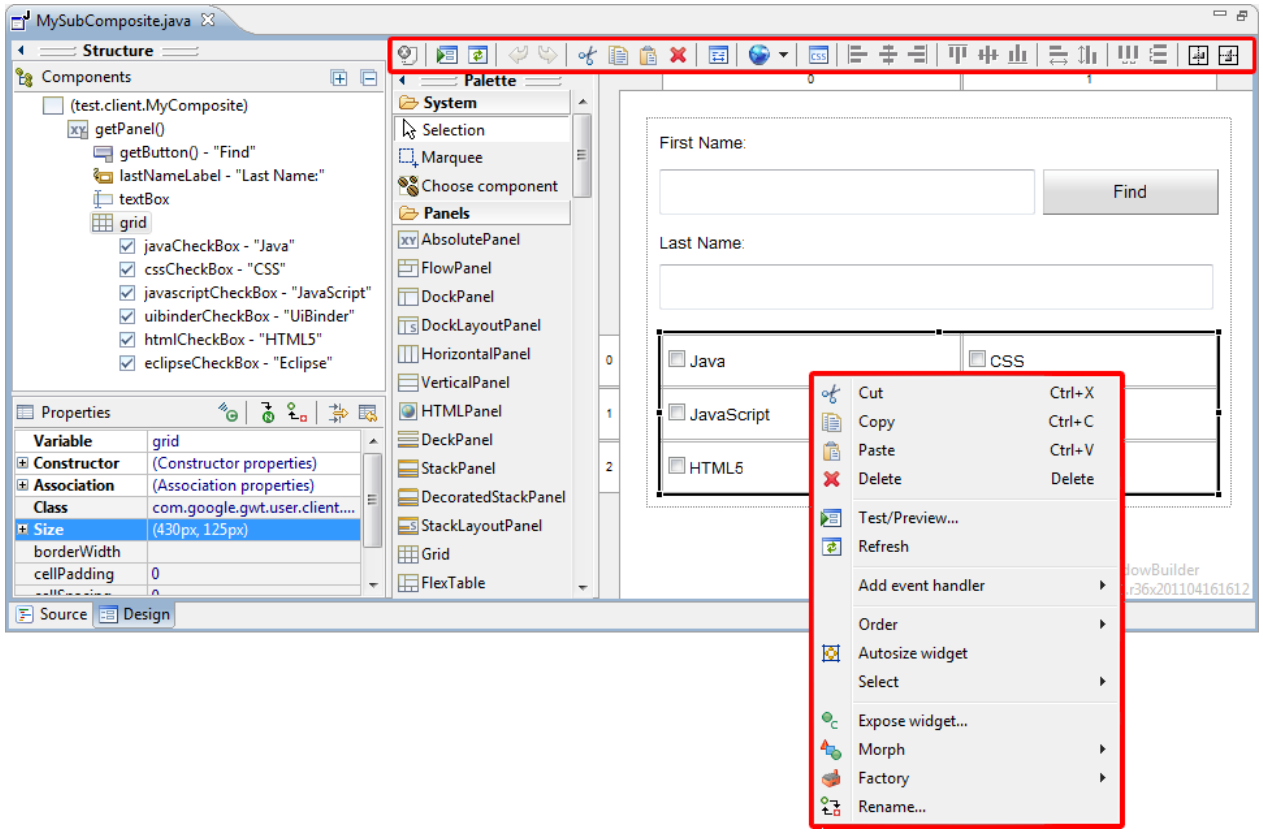
UI Designer Basics

Getting started with the UI Designer

UI Designer User Interface

UI Designer is composed of the following major components

- Source View
- Design View
- Component Tree
- Property Pane
- Palette
- Wizards
- Toolbars & Context Menus



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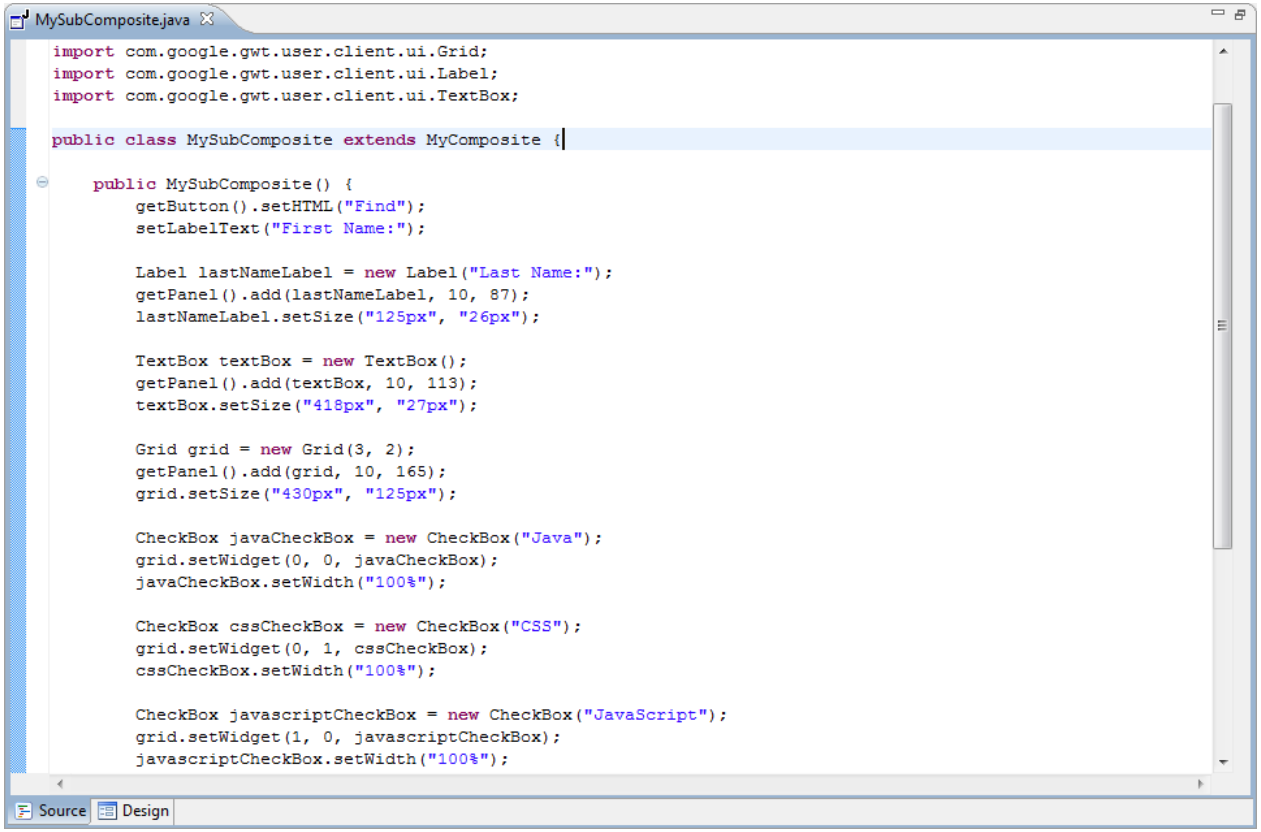
Source View

- Separate tabs for Source and Design view
- Both views visible in a top/bottom or left/right configuration



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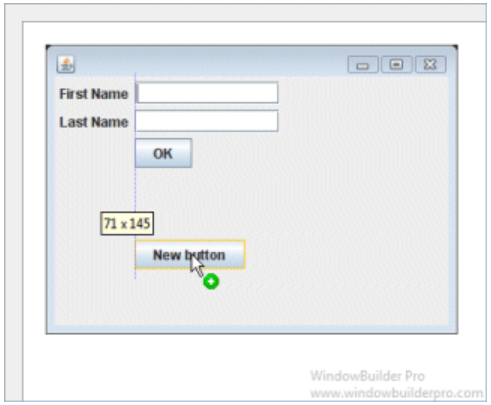
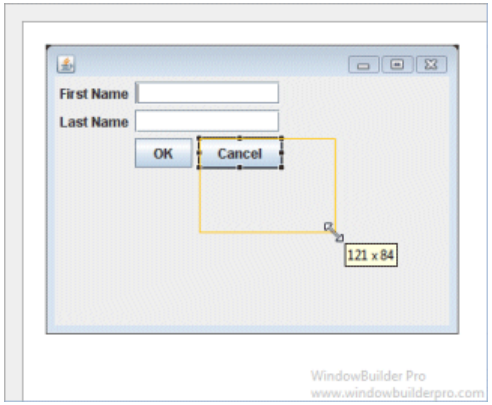
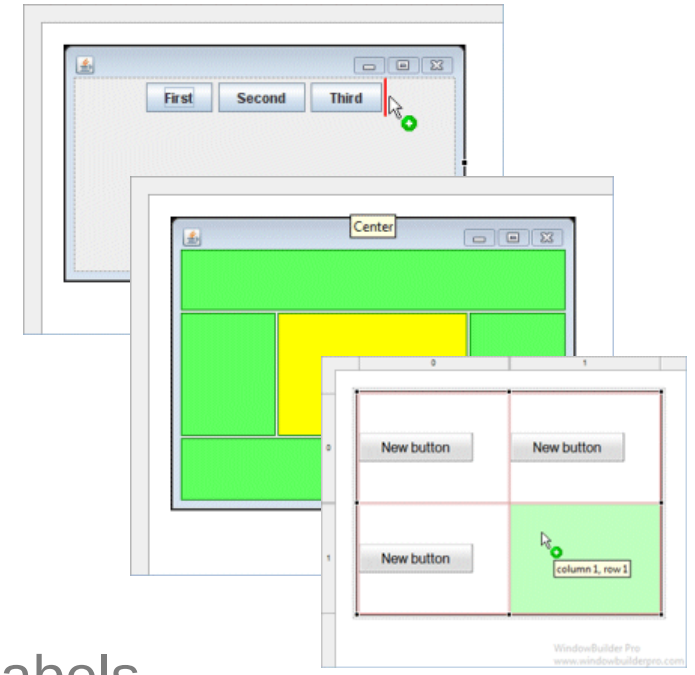
Design View

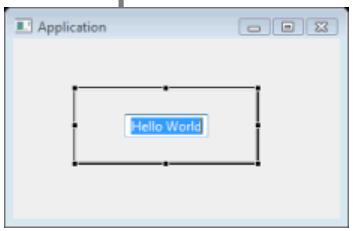
- Each layout has its own UI model
- Move & resize components visually



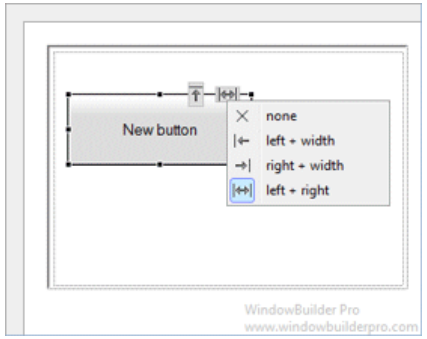




- Hit spacebar to direct edit component labels



- Select attachments using popup context menu



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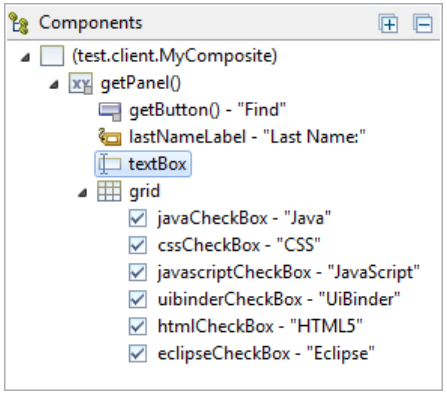
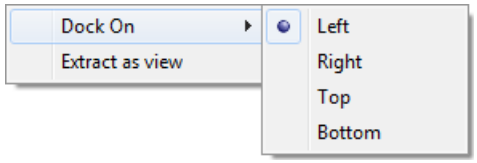
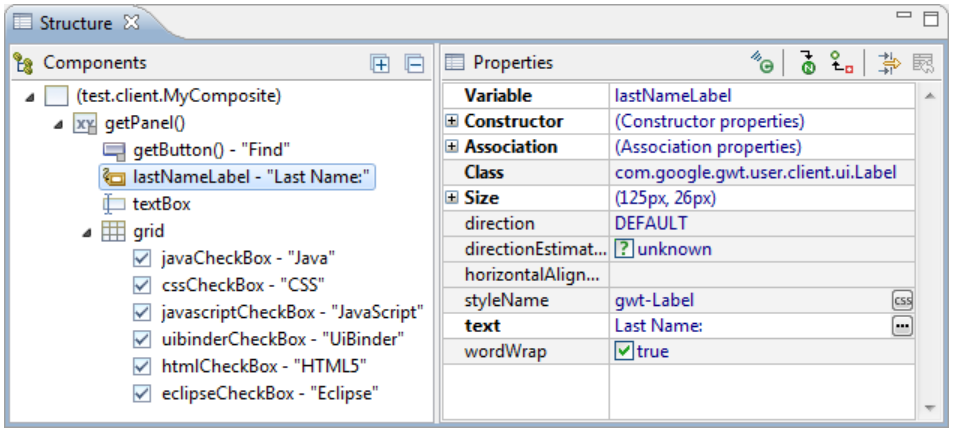
Component Tree

- Hierarchical view of all components
- Displays inst var name of component
- Shows text of component
- Right-click to cut/copy/paste widgets
- Use drag/drop to reorder and nest
- Dock to editor or open as standalone view







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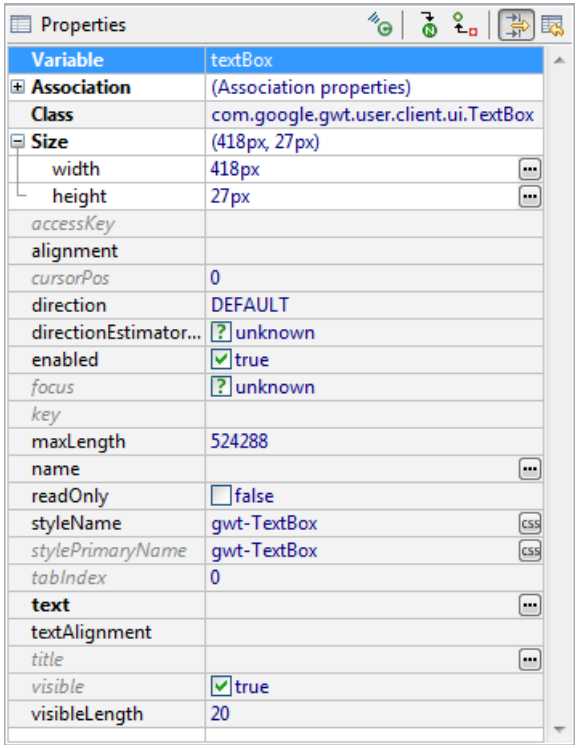
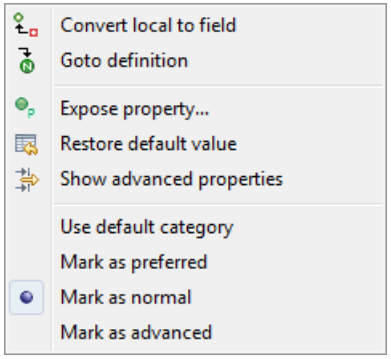
Properties View

- Supports all common properties
- Hide & Show advanced properties
- Highlight important properties
- Convert local/field
- Open definition
- Show events
- Mark preferred & advanced properties





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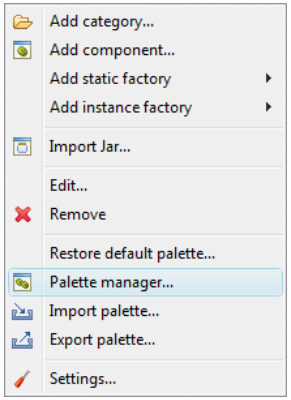
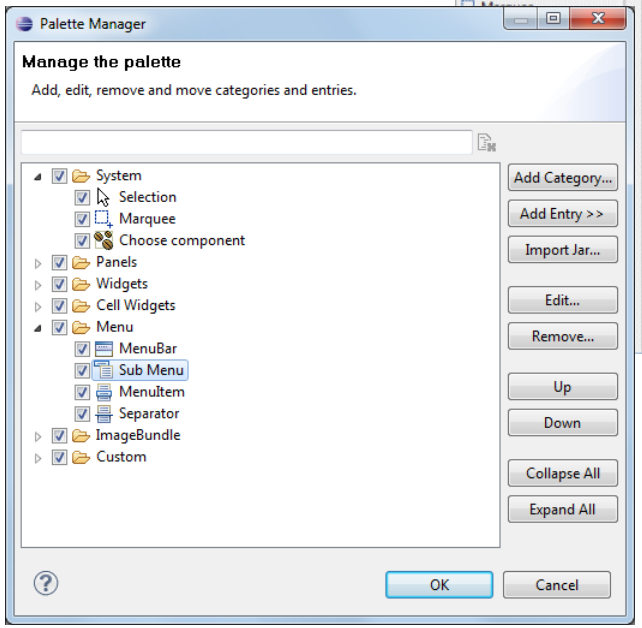
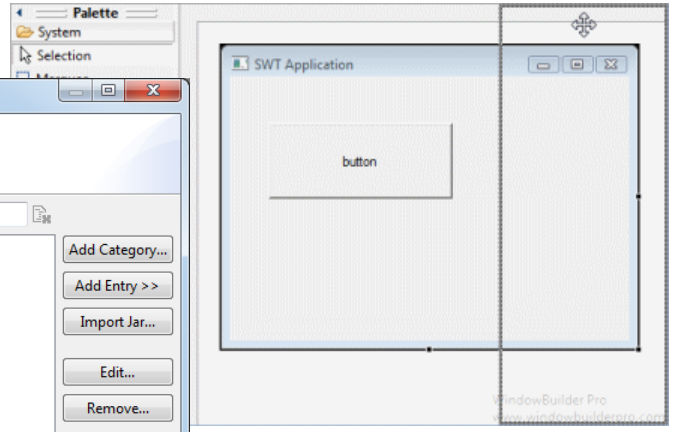
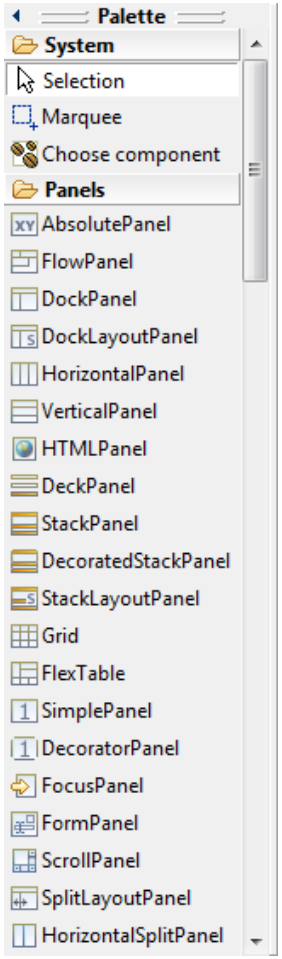
Palette

- Single select or marquee select
- Choose component to select arbitrary components
- Special palettes for GXT and SmartGWT
- Palette can dock to editor or open as standalone view
- Fully customizable by user









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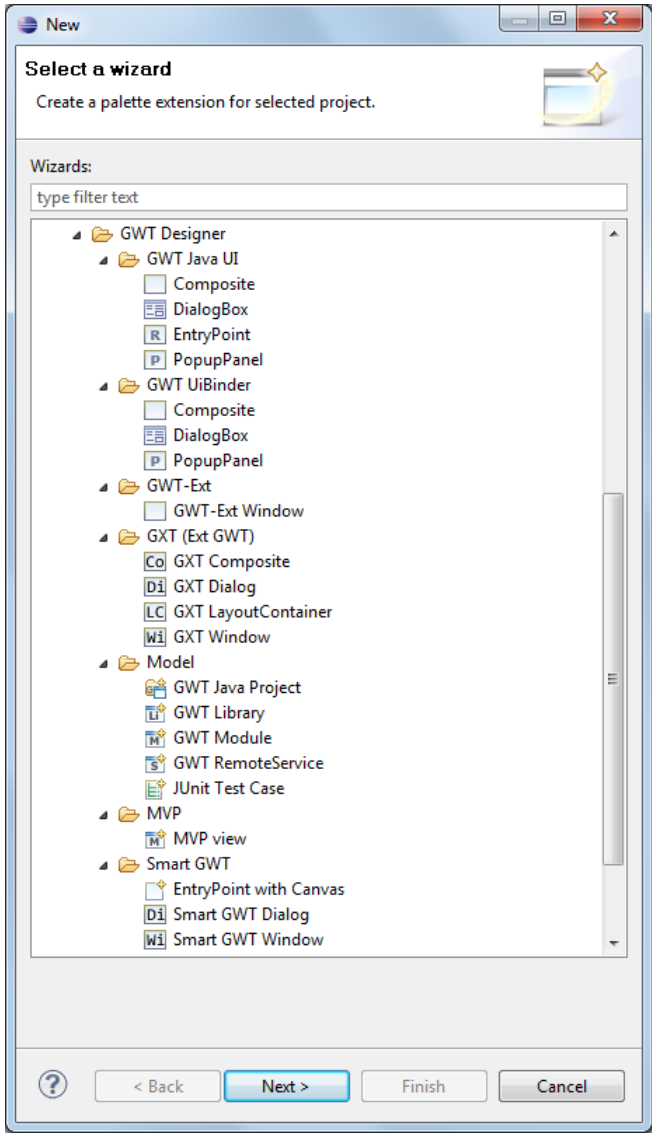
Wizards

- Full version contains dozens of new UI wizards
- Select File > New > Other > WindowBuilder > GWT Designer
- Or use drop down tool button menu
- Dozens of templates for creating GWT Java, UiBinder, MVP, GXT and SmartGWT components



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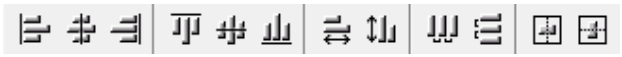
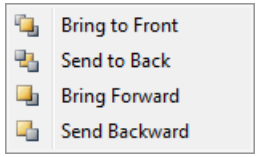
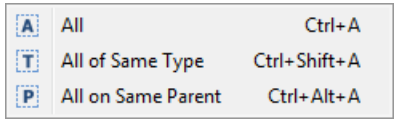
Toolbars & Context Menus

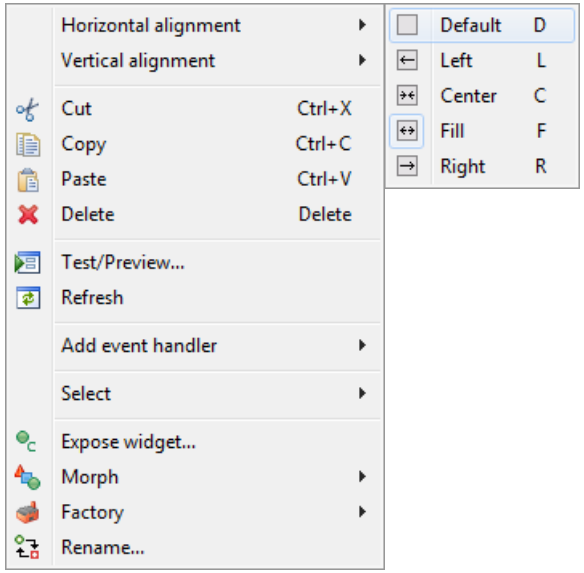
- Cut, Copy & Paste components
- Align & Distribute components



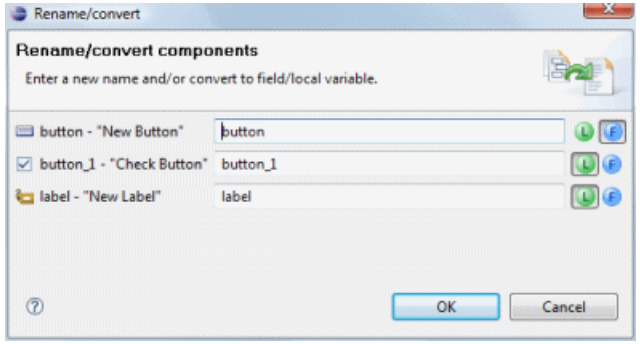
- Delete components
- Order & Select components



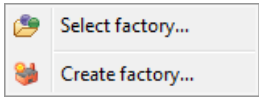




- Rename components



- Add event handlers
- Morphing & factories



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UI Designer Comparison

GPE Embedded vs. Full Eclipse versions

	GPE Embedded Version	Full Eclipse Version
Standard GWT widgets & panels	✓	✓
GWT Java & UiBinder	✓	✓
Ext-GWT (GXT) & SmartGWT		✓
Extra UI wizards		✓
Customization Options	✓	✓ ✓ ✓
FREE!!	✓	✓

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Basic UI Designer Demo

A quick demo of basic UI Designer features

Key UI Designer Features

Powerful features for creating Web UIs

Key UI Designer Features

UI Designer supports many state-of-the-art features

- WYSIWYG & Bi-directional Code Generation
- Powerful & Flexible Code Parser
- Read & Write Any Format or Style
- Internationalization
- Visual Inheritance
- UI Factories
- Morphing
- Widgets & Panels
- Graphical Menu Editing

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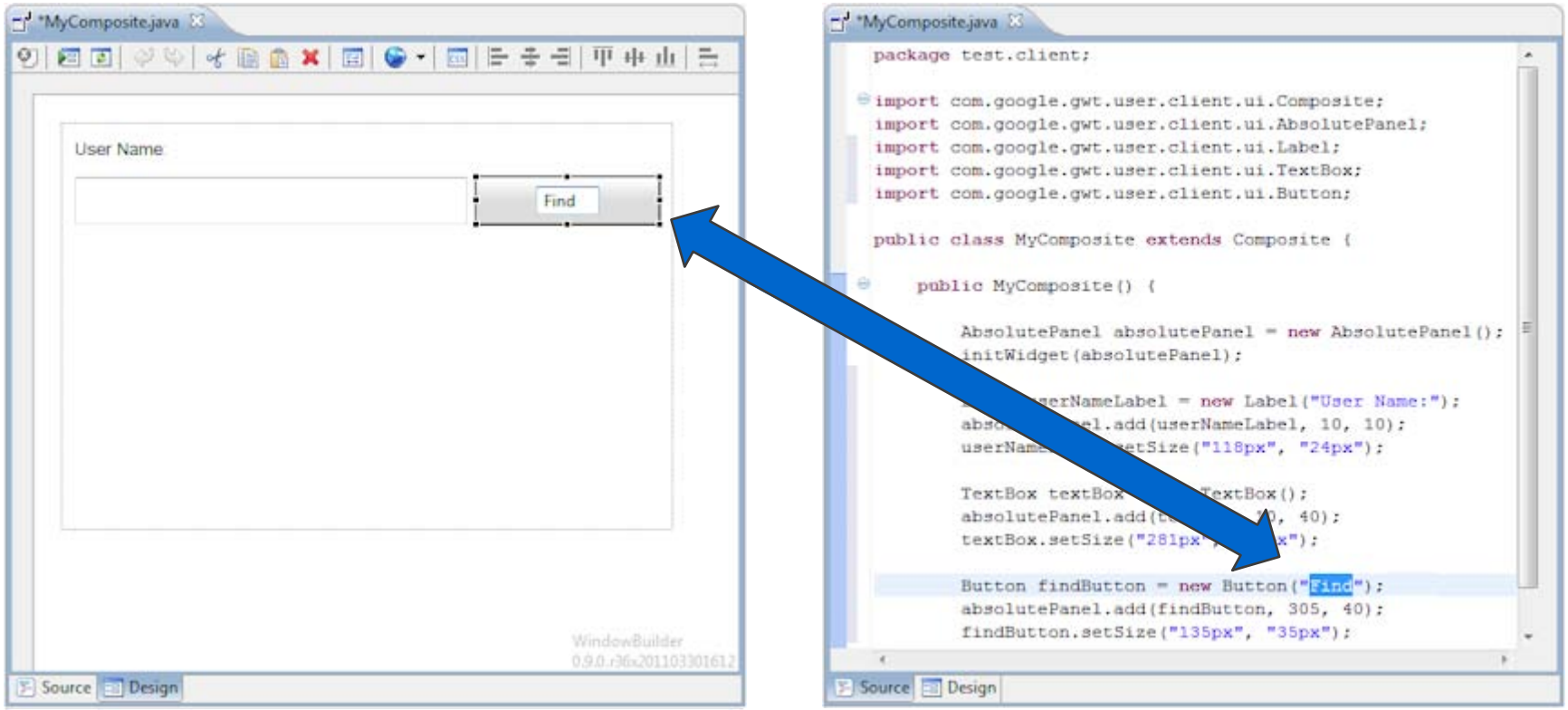
WYSIWYG & Bi-directional Code Generation

- WYSIWYG editing in design view
- Bi-directional Code Generation
- Micro edits result in smallest possible code change



Powerful & Flexible Code Parser

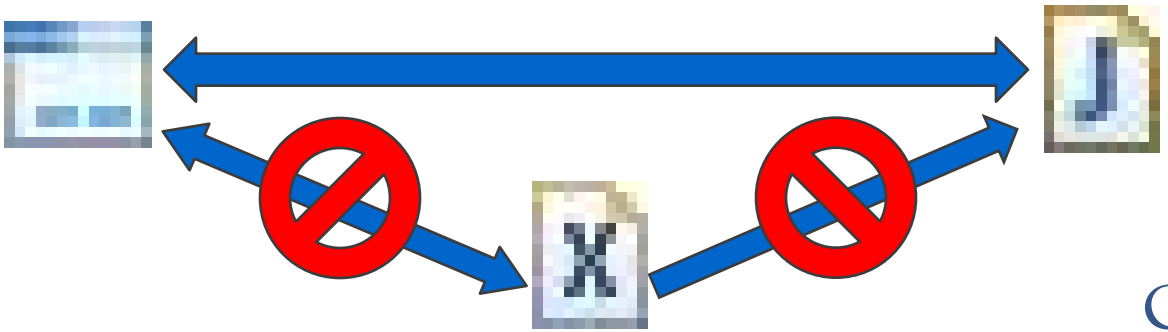
- Can parse its own code and code written by hand
- No protected code blocks
- Understands data flow
- Ignores & preserves non-UI code
- Refactoring friendly and resilient to hand-made changes

*MyComposite.java

```
package test.client;

import com.google.gwt.user.client.ui.Composite;
import com.google.gwt.user.client.ui.AbsolutePanel;
import com.google.gwt.user.client.ui.Label;
import com.google.gwt.user.client.ui.TextBox;
import com.google.gwt.user.client.ui.Button;

public class MyComposite extends Composite {

    public MyComposite() {

        AbsolutePanel absolutePanel = new AbsolutePanel();
        initWidget(absolutePanel);

        Label userNameLabel = new Label("User Name:");
        absolutePanel.add(userNameLabel, 10, 10);
        userNameLabel.setSize("118px", "24px");

        TextBox textBox = new TextBox();
        absolutePanel.add(textBox, 10, 40);
        textBox.setSize("281px", "27px");

        Button findButton = new Button("Find");
        absolutePanel.add(findButton, 305, 40);
        findButton.setSize("135px", "35px");
```

Source | Design

- One-to-one relationship between UI and Java/XML code
- No intermediate metadata file to get lost or out of sync



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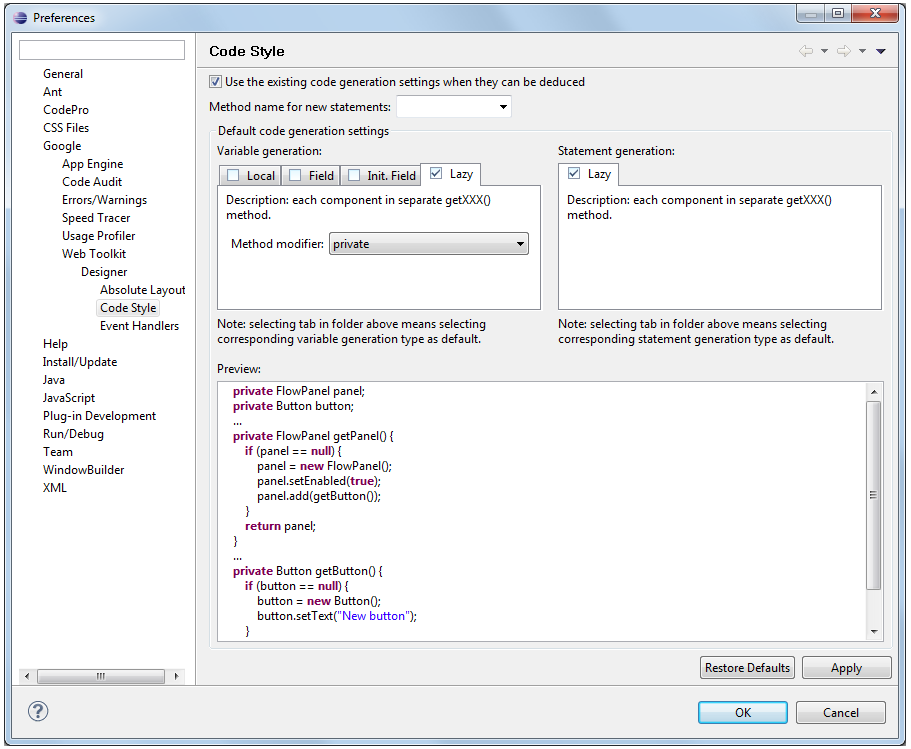
Read & Write Any Format or Style

Window > Preferences > Google > Web Toolkit > Designer > Code Style

- Local variables vs. Fields
- Flat vs. Block
- Initialized fields
- Lazy declaration




```
...
FlowPanel panel = new FlowPanel();
panel.setEnabled(true);

Button button = new Button();
button.setText("Add customer...");
panel.add(button);
...
```

```
private FlowPanel panel;
private Button button;
...
private FlowPanel getPanel() {
  if (panel == null) {
    panel = new FlowPanel();
    panel.setEnabled(true);
    panel.add(getButton());
  }
  return panel;
}
...
private Button getButton() {
  if (button == null) {
    button = new Button();
    button.setText("New button");
  }
  return button;
}
```

```
...
{
  FlowPanel panel = new FlowPanel();
  panel.setEnabled(true);
  {
    Button button = new Button();
    button.setText("Add customer...");
    panel.add(button);
  }
  ...
}
...
```

```
private final FlowPanel panel = new FlowPanel();
private final Button button = new Button();
...
panel.setEnabled(true);

panel.add(button);
button.setText("Add customer...");
...
```

```
private FlowPanel panel;
private Button button;
...
panel = new FlowPanel();
panel.setEnabled(true);

button = new Button();
button.setText("Add customer...");
panel.add(button);
...
```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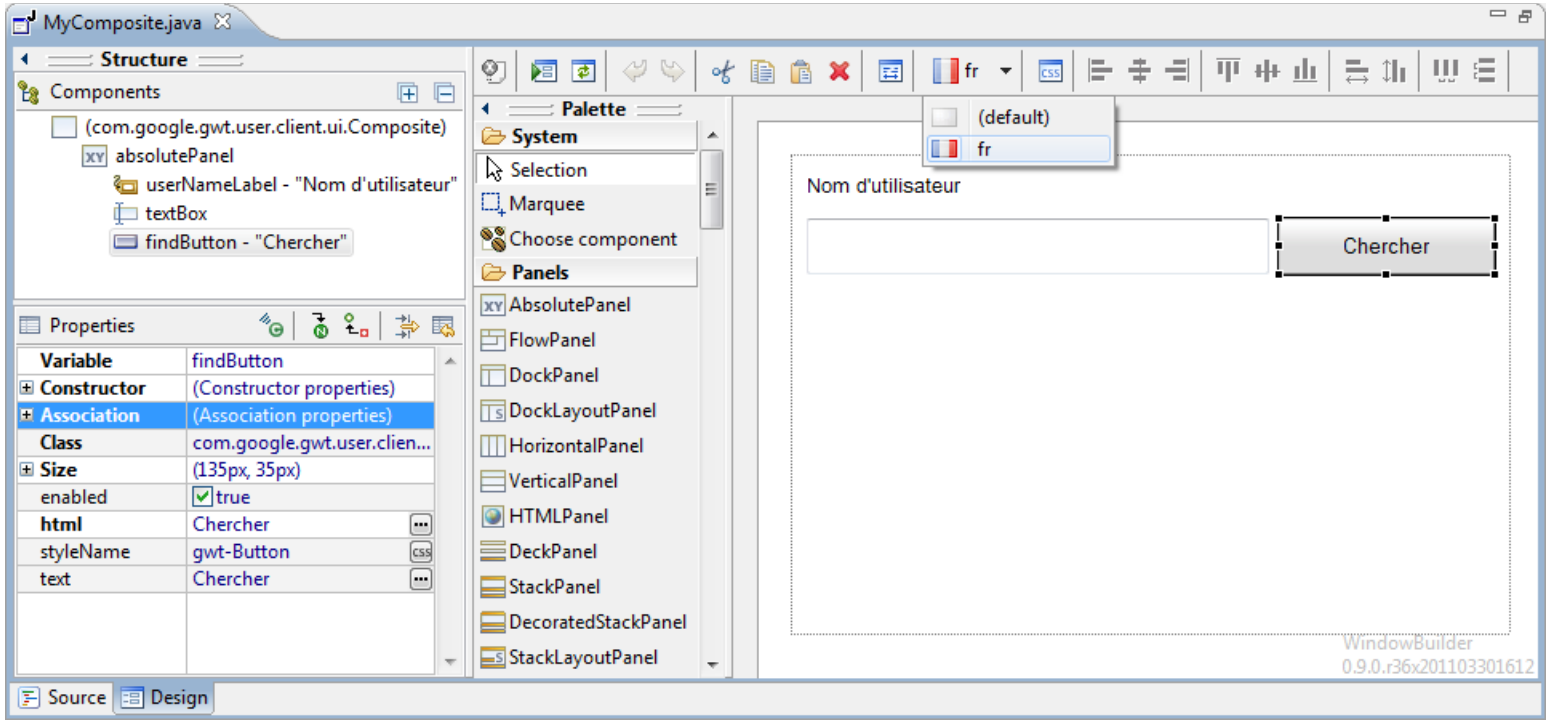
Internationalization

Offers easy-to-use Internationalization and Localization tools



AppConstants.properties

```
#GWT variable: CONSTANTS
findButton_html=Search
userNameLabel_text=User Name:
```

AppConstants_fr.properties

```
#GWT variable: CONSTANTS
findButton_html=Chercher
userNameLabel_text=Nom d'utilisateur:
```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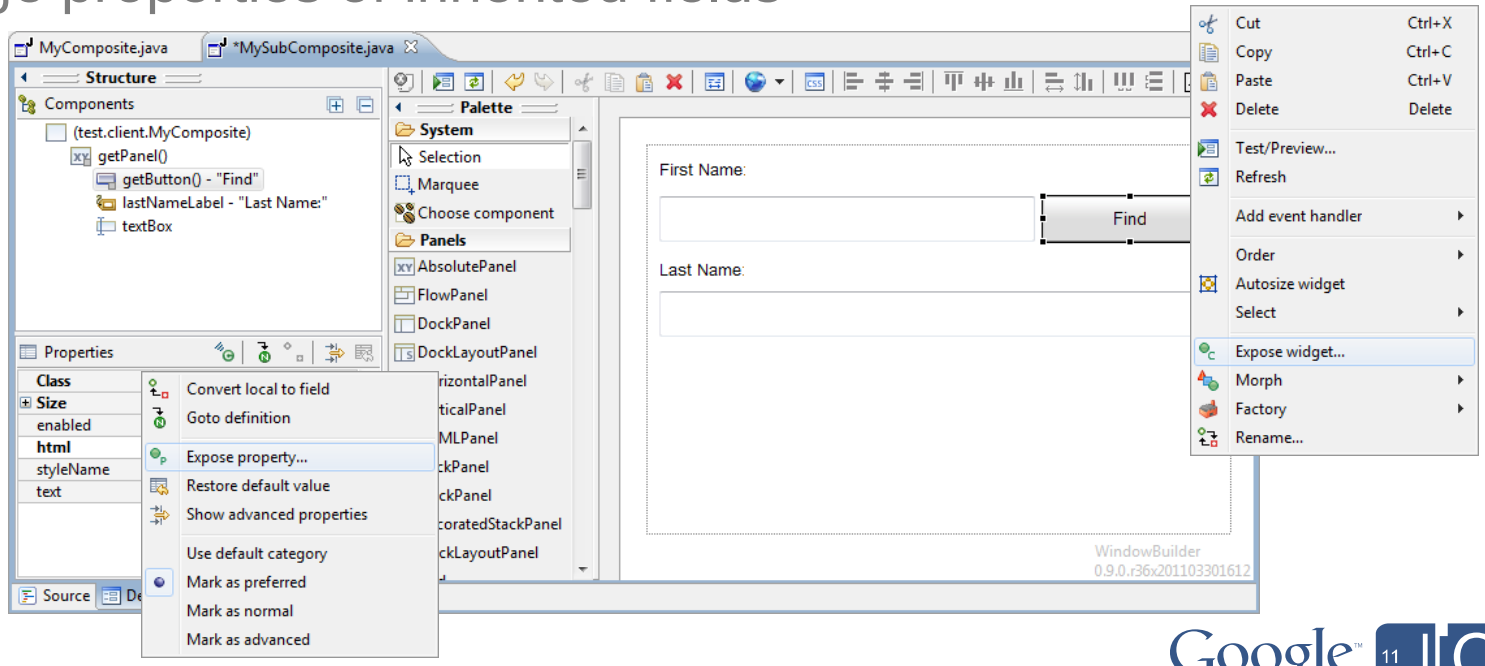
Visual Inheritance

Provides visual inheritance so that code features can be easily inherited from a parent – child hierarchy

- Easily expose fields and properties
- Add components & event handlers to inherited fields
- Change public properties of inherited components
- Change properties of inherited fields



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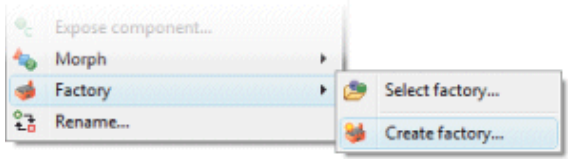
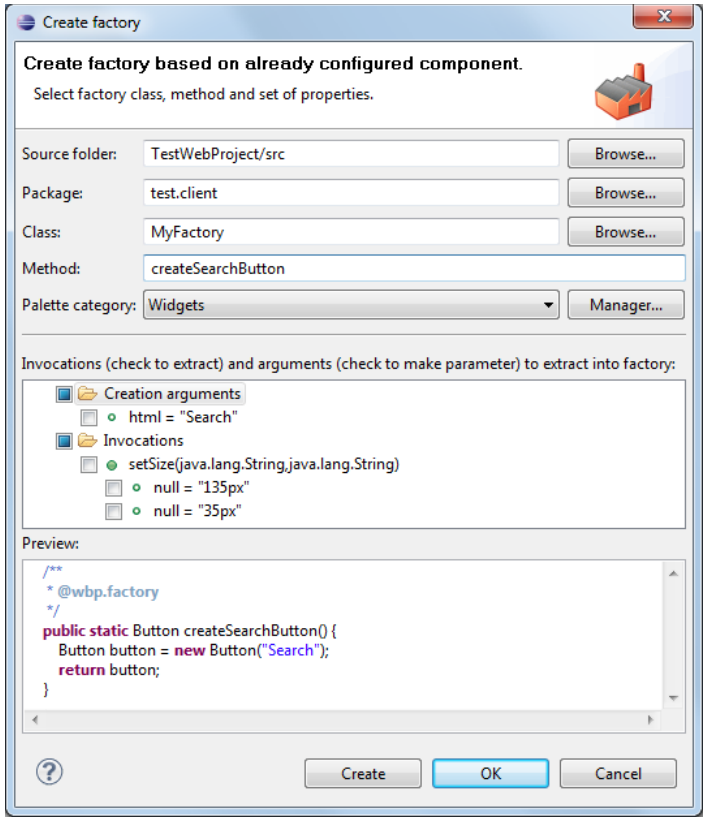
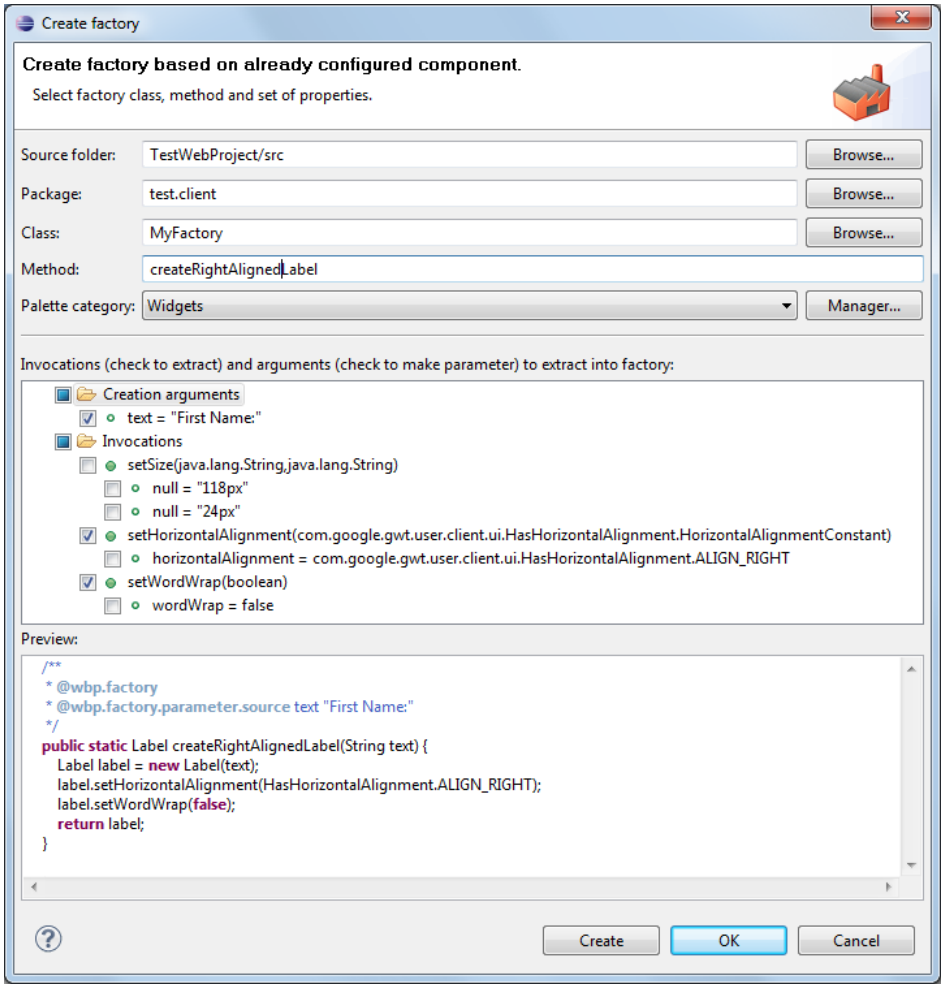
UI Factories

Support for UI Factories and reusable customized GUI elements







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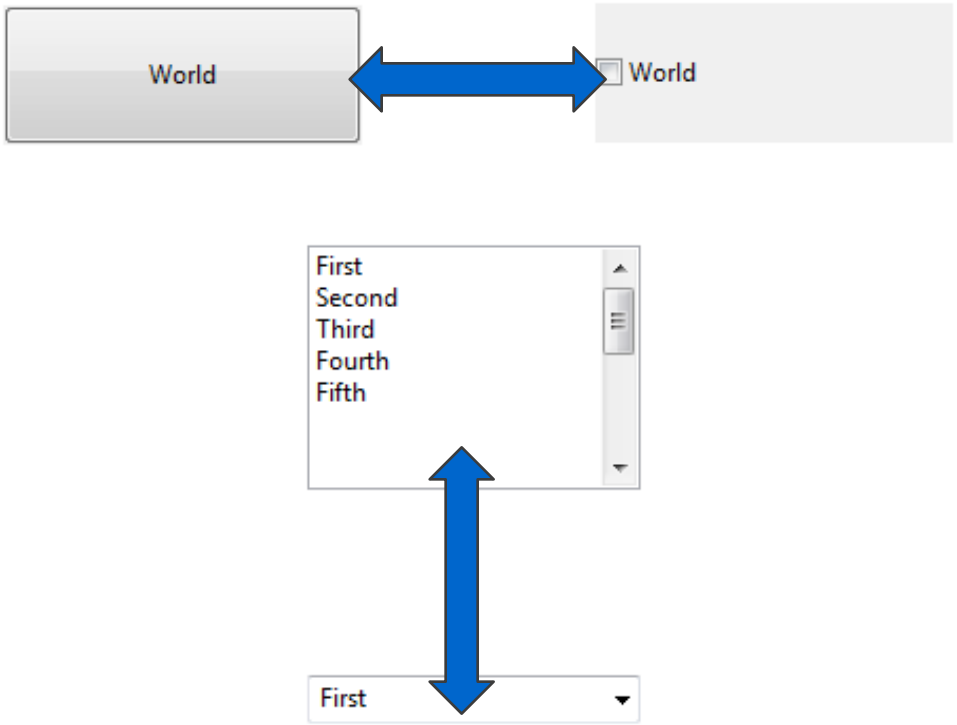
Morphing

Provides a Morphing tool to easily change one widget type into another



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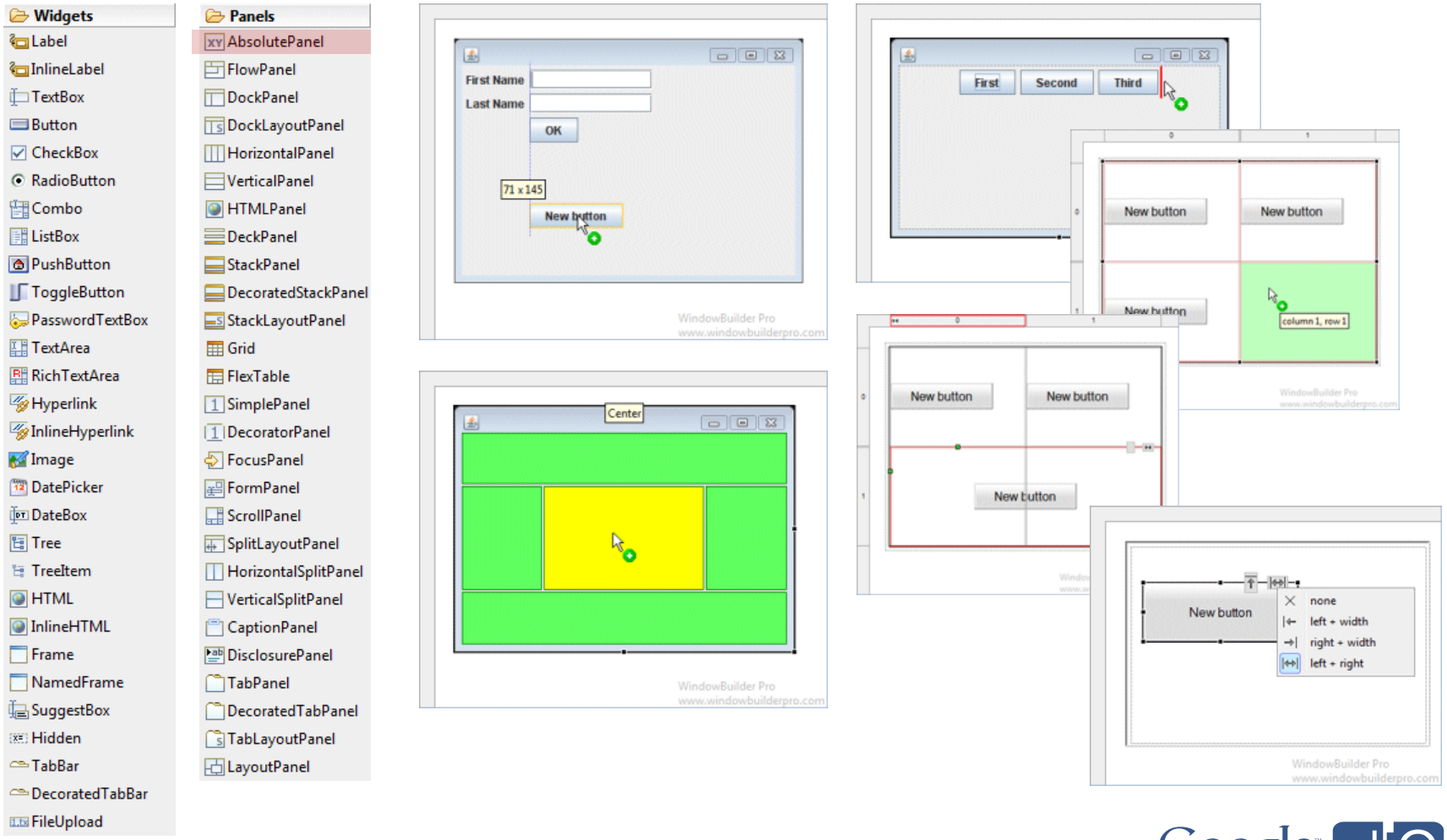
Widgets & Panels

Fully supports all standard widgets and panels as well as select third-party widgets and panels



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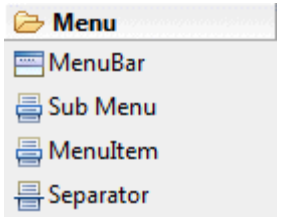
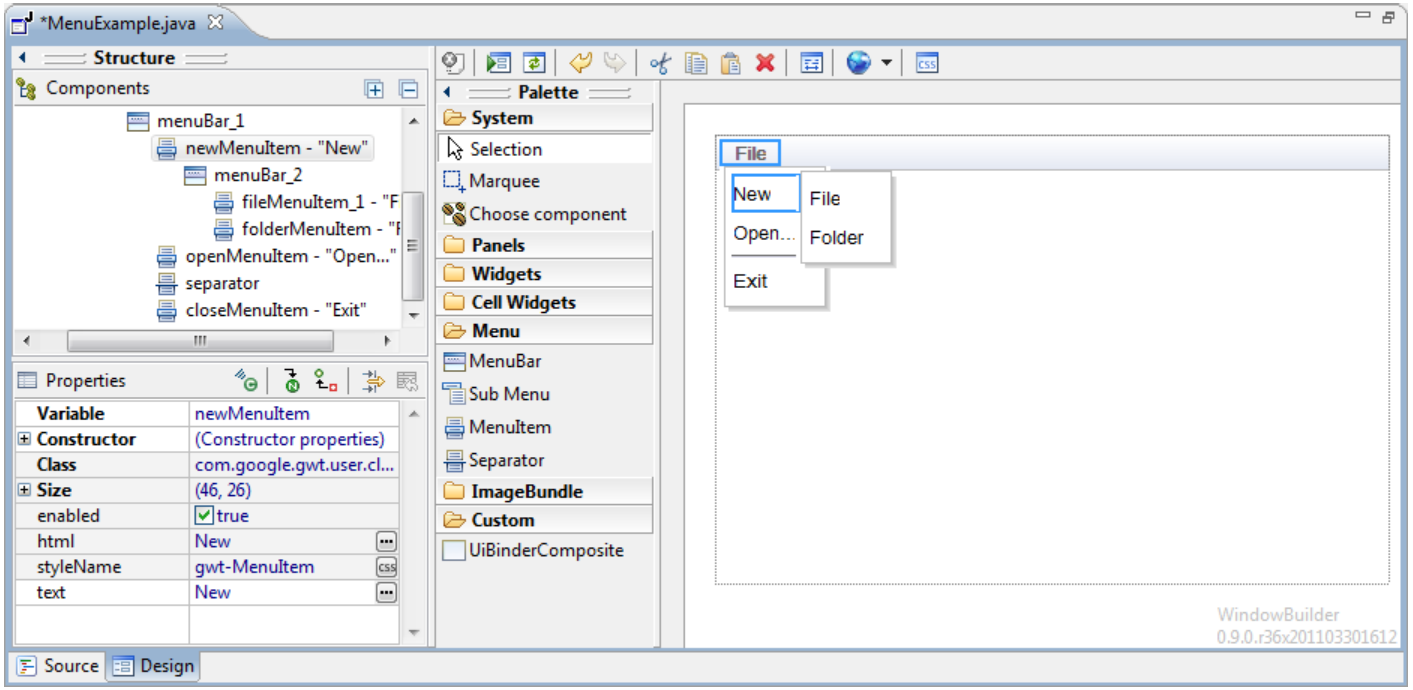
Graphical Menu Editing

Supports WYSIWYG Graphical Menu Editing

- Graphical edit menubars and menuitems
- Use drag/drop to rearrange menus
- Direct edit menu labels





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Advanced UI Designer Demo

A quick demo of advanced UI Designer features

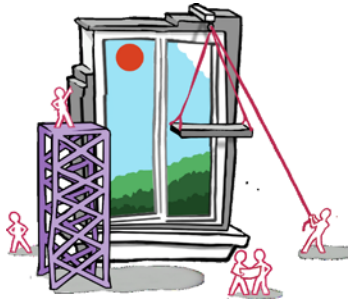
Wrap-Up

What did we talk about?

Wrap-Up

What did we talk about?

- Google Web Toolkit – a great way to build Web apps!
- Google Plugin for Eclipse – a great way to build GWT apps!
- UI Designer – a great way to build GWT Web UIs!



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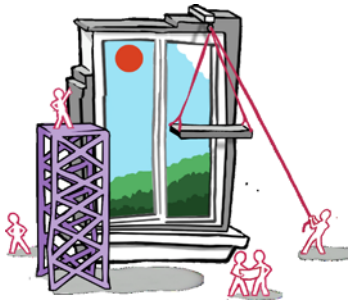
Q & A

Don’t be shy!

Thank You

- Where to get it:
  http://code.google.com/webtoolkit/
  http://code.google.com/webtoolkit/tools/download-gwtdesigner/
- Documentation:
  http://code.google.com/webtoolkit/tools/gwtdesigner/
- Wiki, issue tracker, source:
  http://code.google.com/p/google-web-toolkit/
- Official GWT blog:
  http://google-web-toolkit.blogspot.com/
- Feedback:
  http://goo.gl/qWIni



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