

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



Introduction

Who am I and what is the UI Designer?

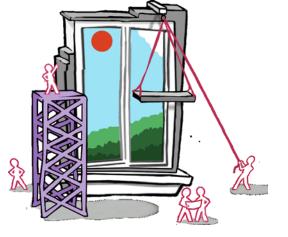


Introduction

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







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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 javascriptCheckBox - "JavaScript" uibinderCheckBox - "UiBinder" 	DockPanel																					
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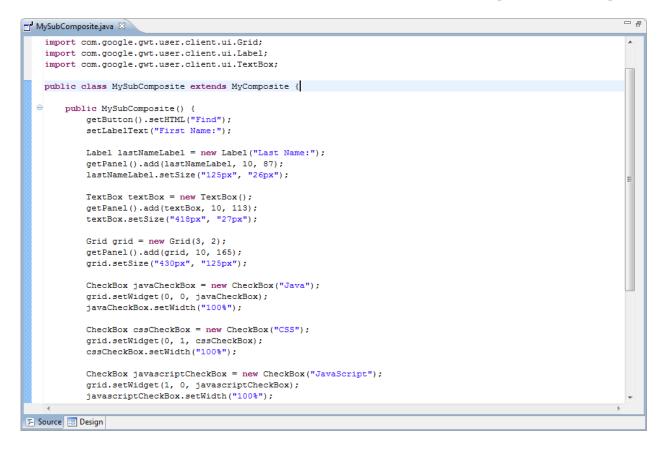
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Expose widget... Morph

Factory Rename

Source View

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





Design View

-

First Name

Last Name

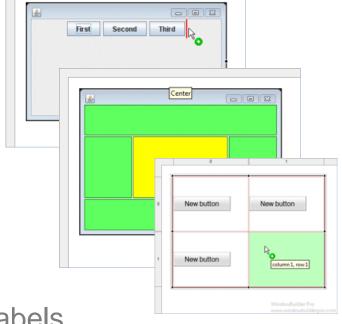
OK

New button

71 x 145

• Each layout has its own UI model

• Move & resize components visually



• <u>Hit spacebar to direct edit component labels</u>

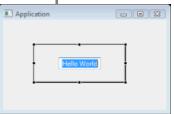
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First Name

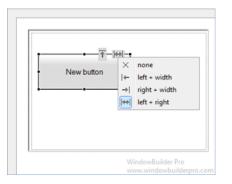
Last Name

OK

Cancel



 Select attachments using popup context menu



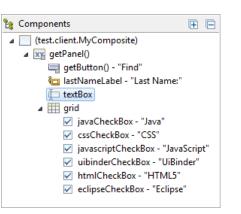
121 x 84



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

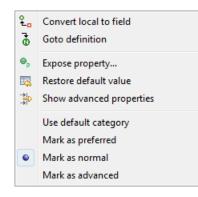
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Properties View

- Supports all common properties
- Hide & Show advanced properties
- Highlight important properties
- Convert local/field La
- Open definition
- Show events ⁴_G
- Mark preferred & advanced properties



Properties	*g 👌 🗞 🎇 🛛
Variable	textBox
Association	(Association properties)
Class	com.google.gwt.user.client.ui.TextBox
Size	(418px, 27px)
width	418px 💼
height	27рх 💼
accessKey	
alignment	
cursorPos	0
direction	DEFAULT
directionEstimator	? unknown
enabled	✓ true
focus	? unknown
key	
maxLength	524288
name	
readOnly	false
styleName	gwt-TextBox GS
stylePrimaryName	gwt-TextBox GS
tabIndex	0
text	
textAlignment	
title	
visible	✓true
visibleLength	20



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

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🗆 Palette 🚃

Schoose component

Selection

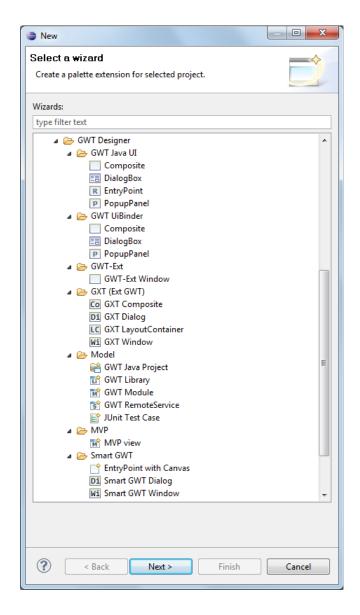
Panels
 AbsolutePanel

FlowPanel

DockLayoutPanel
HorizontalPanel

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





Toolbars & Context Menus

- Cut, Copy & Paste components
- Align & Distribute components
- Delete components 🗱
- Order & Select components

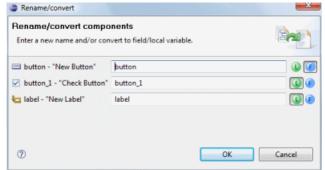
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2	Send to Back	T	All of Same Type	Ctrl+Shift+A
	Bring Forward	P	All on Same Parent	t Ctrl+Alt+A
	Send Backward			



- Rename components
- Add event handlers
- Morphing & factories



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	Vertical alignment	•	←	Left
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8	Test/Preview			
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	Add event handler	+		
	Select	•		
c	Expose widget			
5	Morph	+		
	Factory	+		
	Rename			





UI Designer Comparison

GPE Embedded vs. Full Eclipse versions

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



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





WYSIWYG & Bi-directional Code Generation

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

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9) @ 집 ◇ ◇ 중 @ @ ★ 团 중 → 四 등 축 퀵 平中山 등	package test.client;
User Name	<pre> • 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); verNameLabel = new Label("User Name:"); absolutePanel = new Label("User Name:"); userNameLabel = new Label("User Name:"); absolutePanel = new Label("User Name:"); absolutePanel</pre>
	<pre>TextBox textBox TextBox(); absolutePanel.add(t</pre>
	Button findButton = new Button ("Find");
	absolutePanel.add(findButton, 305, 40);
WindowBuilder 0.9.036-201103301612	findButton.setSize("135px", "35px");
Source Design	Source Design

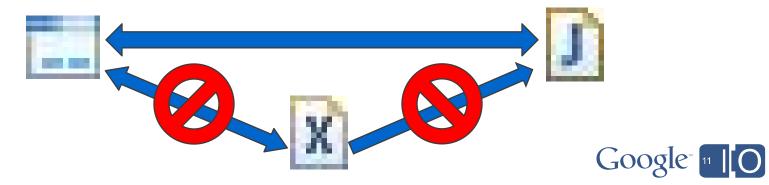


Powerful & Flexible Code Parser

- 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

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⊖ impor	t com.google.gwt.user.client.ui.Composite;	
impor	t com.google.gwt.user.client.ui.AbsolutePanel;	
impor	t com.google.gwt.user.client.ui.Label;	
impor	t com.google.gwt.user.client.ui.TextBox;	
impor	t com.google.gwt.user.client.ui.Button;	
publi	c class MyComposite extends Composite {	
∋ p	ublic MyComposite() {	
	AbsolutePanel absolutePanel = new AbsolutePanel();	5
	<pre>initWidget(absolutePanel);</pre>	
	<pre>Label userNameLabel = new Label("User Name:");</pre>	
	<pre>absolutePanel.add(userNameLabel, 10, 10);</pre>	
	<pre>userNameLabel.setSize("118px", "24px");</pre>	
	<pre>TextBox textBox = new TextBox();</pre>	
	<pre>absolutePanel.add(textBox, 10, 40);</pre>	
	<pre>textBox.setSize("281px", "27px");</pre>	
	<pre>Button findButton = new Button("Find");</pre>	
	<pre>absolutePanel.add(findButton, 305, 40);</pre>	
	<pre>findButton.setSize("135px", "35px");</pre>	
4	4	

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



Read & Write Any Format or Style

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

Preferences

Code Style Local variables vs. Fields General Vse the existing code generation settings when they can be deduced Ant Method name for new statements: CodePro CSS Files Default code generation settings Flat vs. Block Google Variable generation: App Engine 🗌 Local 🔲 Field 🔲 Init. Field 🗹 Lazy Code Audit Description: each component in separate getXXX() Errors/Warnings private FlowPanel panel; method. Speed Trace private Button button; Usage Profiler Method modifier: private Initialized fields Web Toolkit Designer private FlowPanel getPanel() { Absolute Layout if (panel == null) { Code Style Event Handlers Note: selecting tab in folder above means selecting panel = new FlowPanel(); corresponding variable generation type as default. Help Lazy declaration panel.setEnabled(true); Install/Update Preview panel.add(getButton()); Java private FlowPanel panel; JavaScript private Button button; Plug-in Development return panel; Run/Debug private FlowPanel getPanel() { Team if (panel == null) { panel = new FlowPanel() WindowBuilder FlowPanel panel = new FlowPanel(); panel.setEnabled(true) XML panel.add(getButton()); panel.setEnabled(true): private Button getButton() { if (button == null) { return panel; Button button = new Button(); button = new Button(); button.setText("Add customer..."): button.setText("New button"); private Button getButton() { if (button == null) { panel.add(button); button = new Button(): button.setText("New button") return button; ∢ [FlowPanel panel = new FlowPanel(); ? panel.setEnabled(true); Button button = new Button(); button.setText("Add customer..."); private FlowPanel panel; panel.add(button); private Button button; private final FlowPanel panel = new FlowPanel(); private final Button button = new Button(); panel = new FlowPanel(); panel.setEnabled(true); panel.setEnabled(true); ... button = new Button(); panel.add(button); button.setText("Add customer..."); button.setText("Add customer..."); panel.add(button);





Statement generation:

Description: each component in separate getXXX()

Note: selecting tab in folder above means selecting

corresponding statement generation type as default.

Restore Defaults

OK

Apply

Cancel

🗹 Lazy

method

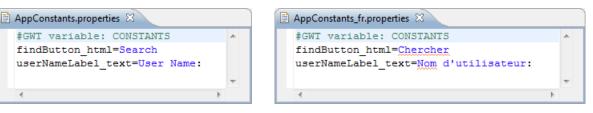
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Internationalization

Offers easy-to-use Internationalization and Localization tools

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Structure Components E	
 (com.google.gwt.user.client.ui.Composite) absolutePanel userNameLabel - "Nom d'utilisateur" textBox findButton - "Chercher" 	System ▲ Image: Selection Image: Selection Image: Selection Image: Selectio
Properties Properties Yariable findButton Constructor (Constructor properties) Association (Association properties) Class com.google.gwt.user.clien Size (135px, 35px) enabled ✓ true html Chercher styleName gwt-Button css text Chercher ··· Source Design	MabsolutePanel FlowPanel DockPanel DockLayoutPanel HorizontalPanel VerticalPanel PeckPanel StackPanel DecoratedStackPanel StackLayoutPanel





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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getButton() - "Find" G lastNameLabel - "Last Name:"	□_ Marquee	· · · · · · · · · · · · · · · · · · ·	2	Refresh	
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	E FlowPanel		M	Select	
	DockPanel			Select	· ·
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UI Factories

Support for UI Factories and reusable customized GUI elements

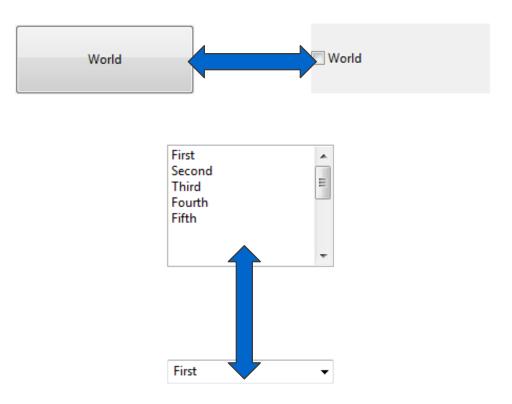
· · ·	Expose component			
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🤹 I	Factory	۰ ک	Select factory	/
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Create factory	/			×
	y based on already conf lass, method and set of properti	-	iponent.	
Source folder:	TestWebProject/src			Browse
Package:	test.client			Browse
Class:	MyFactory			Browse
Method:	createSearchButton			
Palette category:	Widgets		•	Manager
Creat	ck to extract) and arguments (ch tion arguments tml = "Search" cations etSize(java.lang.String,java.lang.S > null = "135px" > null = "35px"			
Preview:				
	Button createSearchButton() { con = new Button("Search");			*
?	Cr	eate	ОК	Cancel

Create factory				
Create factory based on already configured component. Select factory class, method and set of properties.				
Source folder:	TestWebProject/src	Browse		
Package:	test.client	Browse		
Class:	MyFactory	Browse		
Method:	createRightAlignedLabel			
Palette category:	Widgets 🔹	Manager		
Invocations (check to extract) and arguments (check to make parameter) to extract into factory:				
?	Create OK	Cancel		



Morphing

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

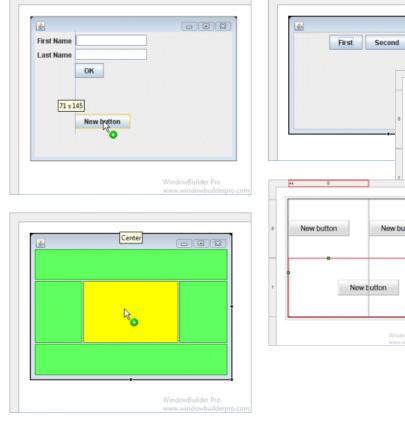


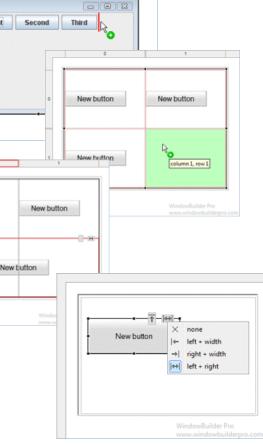


Widgets & Panels

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

➢ Widgets Panels 🔁 Label xy AbsolutePanel InlineLabel FlowPanel TextBox DockPanel Button s DockLayoutPanel CheckBox HorizontalPanel RadioButton VerticalPanel Combo HTMLPanel ListBox DeckPanel PushButton StackPanel ToggleButton DecoratedStackPanel PasswordTextBox StackLayoutPanel TextArea III Grid RichTextArea FlexTable Werlink 🎸 1 SimplePanel Service Hyperlink DecoratorPanel 🚮 İmage FocusPanel The DatePicker E FormPanel DateBox ScrollPanel E Tree SplitLayoutPanel 🗄 Treeltem HorizontalSplitPanel HTML - VerticalSplitPanel InlineHTML CaptionPanel Frame bisclosurePanel NamedFrame TabPanel E SuggestBox DecoratedTabPanel (XE) Hidden TabLayoutPanel - TabBar LayoutPanel DecoratedTabBar





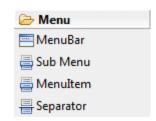


III FileUpload

Graphical Menu Editing

Supports WYSIWYG Graphical Menu Editing

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



🖬 *MenuExample.java 🛛		- e)
 Structure Components menuBar_1 newMenuItem - "New" menuBar_2 fileMenuItem 1 - "F folderMenuItem - "Genu" separator closeMenuItem - "Exit" CloseMenuItem - "Exit" Variable newMenuItem Constructor (Constructor properties) Class com.google.gwt.user.cl Size (46, 26) enabled True html New 	Palette Palette System Selection Marquee Choose component Panels Widgets Cell Widgets MenuBar Sub Menu MenuItem Separator ImageBundle Custom UiBinderComposite	
styleName gwt-MenuItem GS text New m		WindowBuilder 0.9.0.r36x201103301612
E Source E Design		



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!





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





