True Abstraction

JavaServer™ Faces 2.0 Composite Components

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Sun microsystems

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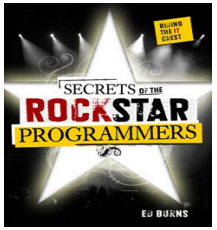
Presentation Goals

- *Demonstrate* the usage of composite components
- *Share* the vision for composite components
- *Show* how to build a composite component

Agenda: All About Composite Components

- Beginning
  - JSF 1.0 Vision and Reality
  - JSF 2.0 Vision
  - DEMO: A taste of the future
- Middle
  - DEMO: Building a simple composite Component
  - Terminology
  - Core Concepts
- End
  - How to Think About Composite Components

Speaker Qualifications: Ed Burns



- Senior Staff Engineer at Sun Microsystems, Inc.
- Since inception, co-leader of the team that develops the JavaServer™ Faces (JSF) Specification
- Co-author of the McGraw-Hill book, JavaServer Faces, The Complete Reference and upcoming JSF2: The Complete Reference
- Author of the McGraw-Hill book: Secrets of Rock Star Programmers: Riding the IT Crest
- Prior to JSF Ed worked on the Sun Java Plug-in, Mozilla Open JavaVM Interface, NCSA Mosaic

Beginning

JSF 1.x Vision for Components

Create a market for re-usable JSF components, allowing developers to easily create UI's for web applications by combining off-the-shelf components from multiple vendors using nice GUI tools.

JavaServer Faces: Motivation

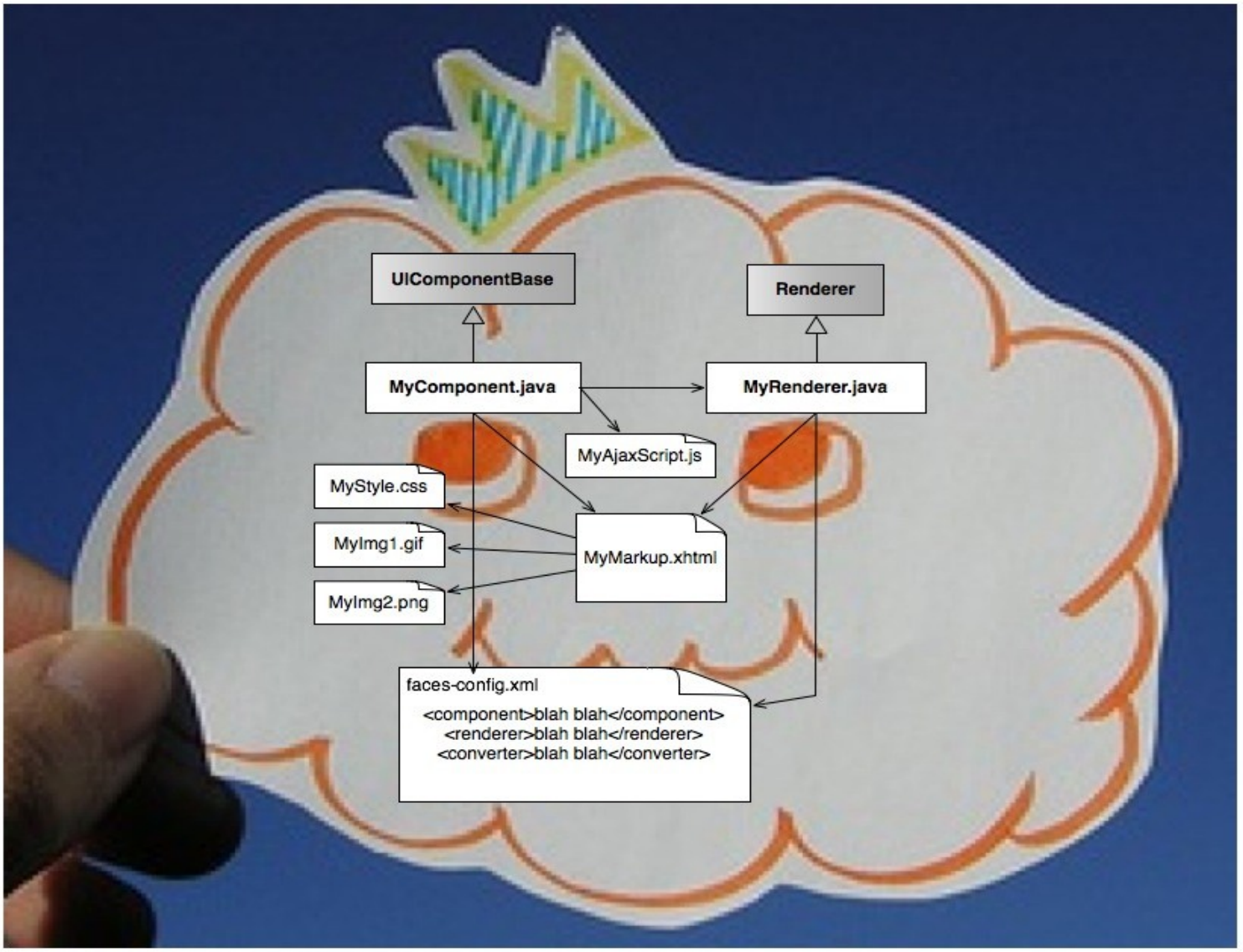
- Eliminate burden on developers
  - Today must create/maintain own frameworks
- Boost Tools, 3rd Party Component support
  - easier to leverage single framework
- Improve GUI quality
  - tools & framework do the hard stuff

JSF 1.X Component Reality

- Good
  - Very active and healthy component market
  - Very good IDE support
- Bad
  - Components not easy enough to build
  - Component vendors had to invent stuff because the spec didn't solve
    - Ajax
    - Resource Loading
    - Library Ordering Precedence

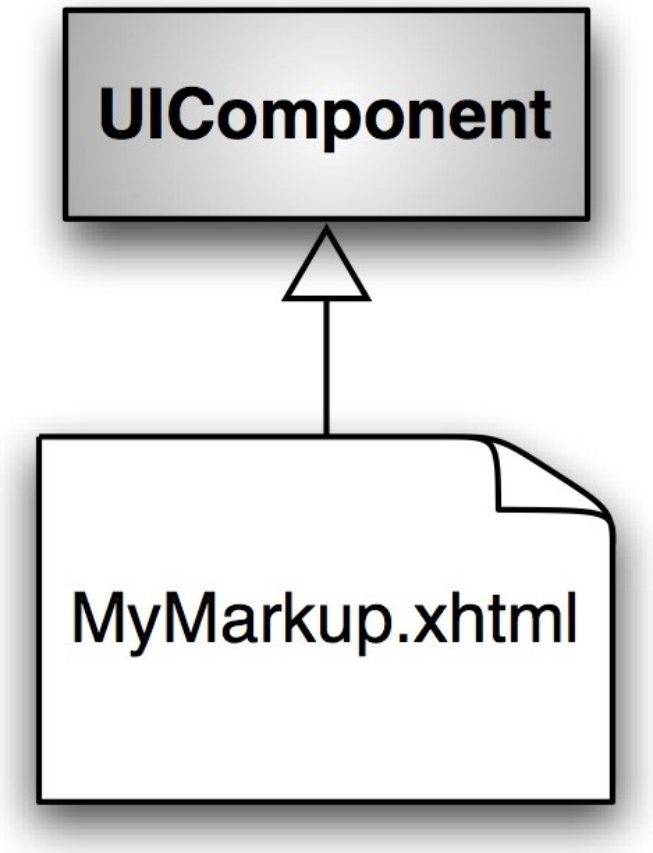
JSF 2.0 Vision for Compnents

- This...



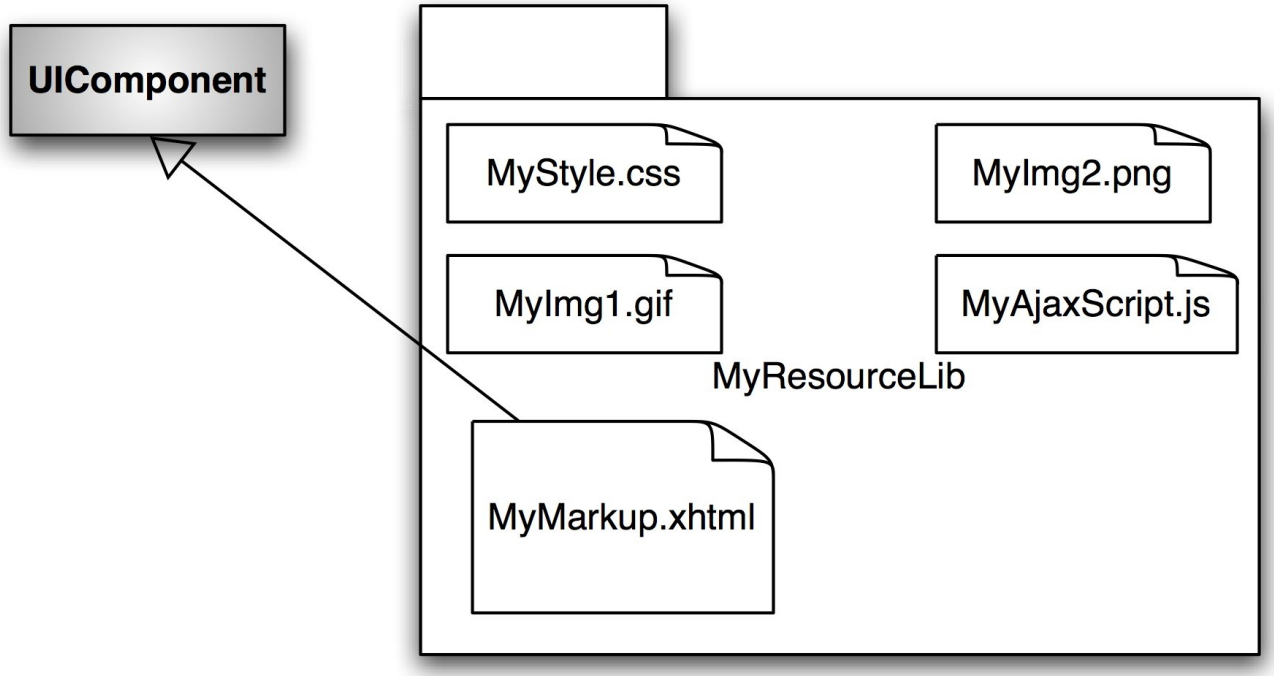
Make components easy to develop

- Becomes this...



Make components easy to develop

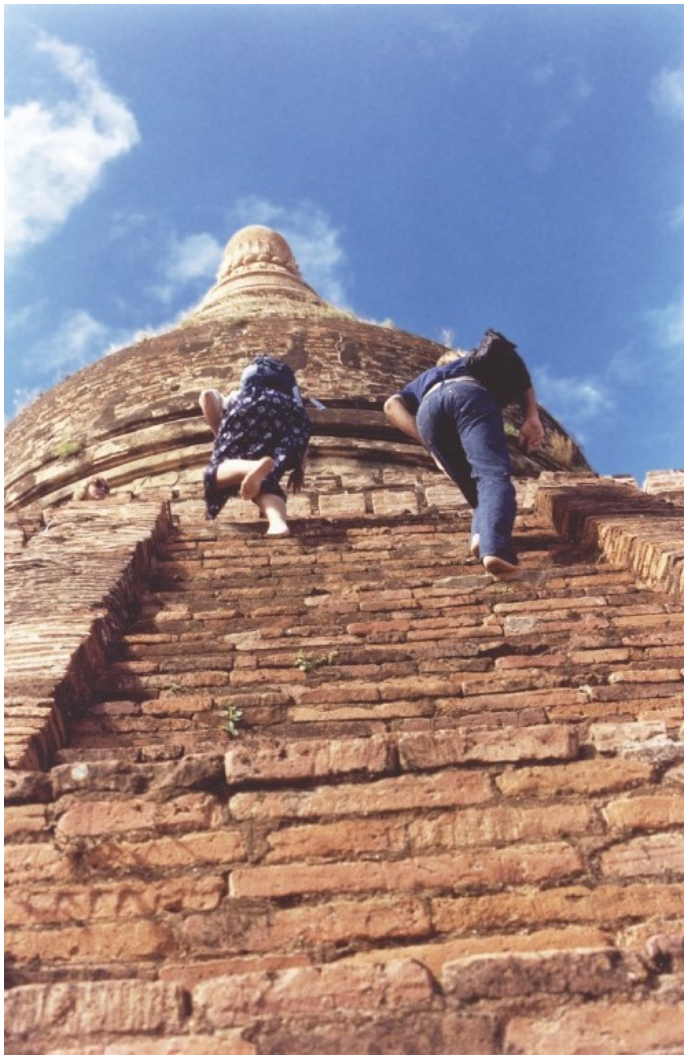
- Or maybe this...



… if you want to get fancy

- "Pay as you go" complexity

JSF 2.0 Component Vision



- multi-select components on a JSF page
- press a “componentize” button
- you get a wizard that lets you choose how to expose the content of this component to the page author
- the component appears in a palette.

Demo: Login Panel from Admin GUI

How do we enable this vision?

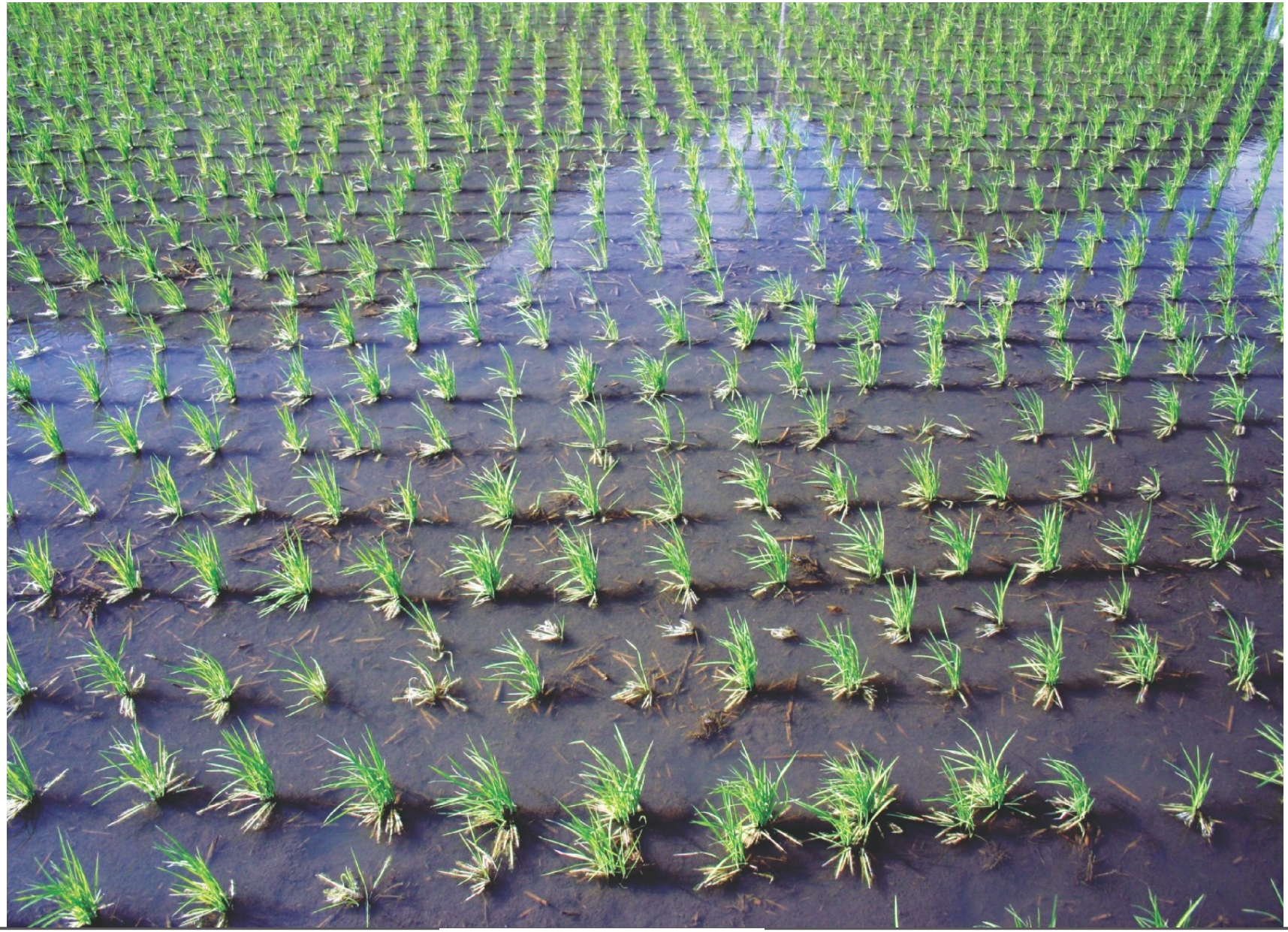
- Reduce the number of artifacts required
- Provide a way to bundle associated resources with the component
- Do it all dynamically, while the app is deployed
- Allow the composite component to be a real component
  - attached objects
  - children components
  - facets
  - ajax capable
- The “old way” still works.

How do we solve the “multi-component-vendors in a single page” problem?

Look at what each vendor had to invent and standardize it

Source of difficulty	Old Way	Standard Way
Resource Loading	PhaseListener, Filter, etc.	Built into the Lifecycle
Ajax	•Proprietary .js file for innerHTML updating Propretary •XML Ajax Response Format	•jsf.ajax JavaScript Object with four functions •Standard XML Ajax Response Format
Library Loading Precedence	Rename Jar files for alphabetical sort order	<ordering>, <absolute-ordering> elements

Middle



Demo: Building your first composite component

Coming to Terms with Composite Components

- Composite Component
  - A tree of **UIComponent** instances, rooted at a *top level component* that can be thought of and used as a single component in a view
- Using Page
  - The page in which a composite component is used
- Composite Component Tag Instance
  - The tag that places an instance of a composite component in the using page
- Defining Page
  - The markup page, usually Facelets that contains the composite component declaration and definition

Coming to Terms with Composite Components

- Top Level Component
  - The UIComponent instance implicitly created by the run-time to serve as the root for the composite component tree.
- Inner Component
  - Any UIComponent inside the defining page or any pages used by that defining page

Other Composite Component Concepts

- Method Expressions DEMO
- Runtime Metadata
- Resources
- Per-component **ResourceBundle**
- Custom top level components, also from Script

End

How to think about Composite Components

- Building components should not be scary or hard
- Make everything private and expose only what the page author needs to see
- Just do it!