Eclipse 4's Modeled UI: Providing you with the Tools to Chart your own Graph
What is the modeled UI?

- An Eclipse 4 application is now backed by a live model
  - Modifiable in real-time
- Model simply describes the structure of the user interface
  - Separation of concerns
  - This is similar to the org.eclipse.ui.menus extension point in a way
- No more IWorkbenchWindows and IWorkbenchPages
  - ...which then suddenly becomes some collection of IWorkbenchParts...
  - ...but with some IWorkbenchPartSite layer between them...
  - ...where do the sashes and stacks come from?
What is represented by the model?

- All the elements contained within an Eclipse workbench window is modeled
  - Windows
  - Perspectives
  - Sash containers
  - Part stacks
  - Parts
  - Menu items
  - Tool bars
What is the model made up of?

- Everything in the model is an ApplicationElement
- Data layer of abstract interfaces
  - A UILabel has an icon, textual string, and a tooltip
  - An ElementContainer has a list of children
  - A Contribution has an implementing object
- Physical layer of concrete implementations
  - A Part extends UILabel and Contribution
  - A Window extends UILabel and ElementContainer
What does the model look like visually?

- Well, it depends...
- The rendering engine defines how each model element should look like
What does the model look like visually?
What does the model look like visually?
What does the model for the SDK look like?
What's in it for me here?

- The previous diagram showed nothing out of the ordinary
- Restrictions on the detaching of parts no longer exist
  - Shapes can be created within these detached windows also
What's in it for me here?

- Elements can now exist outside of a perspective
How clean is the code?

- How do I get my stack to show the 'Console' view?

  ```java
  bottomStack.setSelectedElement(consolePart);
  ```

- How do I move a part into another stack?

  ```java
  otherStack.getChildren().add(consolePart);
  ```

- How do I close an entire stack?

  ```java
  stack.setToBeRendered(false);
  ```
Where can't elements go?

- Generics is used to ensure that an ElementContainer cannot add children of a type it doesn't expect

- If casting is used to get past the checks, IllegalArgumentExceptions are on standby to prevent such illegal operations...
  - ...no MenuItems in a PartSashContainer...
  - ...no ToolItems in a Menu...
  - ...no Parts in a ToolBar...
  - ...no PartSashContainers in a PartStack...
    • ...or can you?
Bug 8009 [Editor Mgmt] Split File Editor

- Three simple handlers
- Split
  - Opens a second editor and performs a merge
- Orientation
  - Changes the split from horizontal to vertical, or vice versa
- Switch
  - Activates the other editor
- StackedSash, a new model element that is a sash that can be added to a PartStack

```java
        return obj;
        
        public Object create()
        
        if (APPEARANCE_PREF
        
        if (COLORS_AND_FOR
        
        if (DECORATORS_PREF
        
        if (EDITORS_PREFER
        
        if (FILE_ASSOCIAT
```
What about views?

- Concept of “multi-instance views” makes this problem harder
- Can work visually but many assumptions not likely to survive
- Views may need a different approach
Q&A
Where do I go for more information?

- Ask questions on the forums or the mailing list
  - http://www.eclipse.org/forums/eclipse.e4
  - http://www.eclipse.org/forums/eclipse.platform
  - http://www.eclipse.org/forums/eclipse.platform.rcp
  - https://dev.eclipse.org/mailman/listinfo/e4-dev (e4-dev@eclipse.org)

- Find us on IRC
  - irc.freenode.net at #eclipse-e4
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