



Eclipse Plug-ins Development

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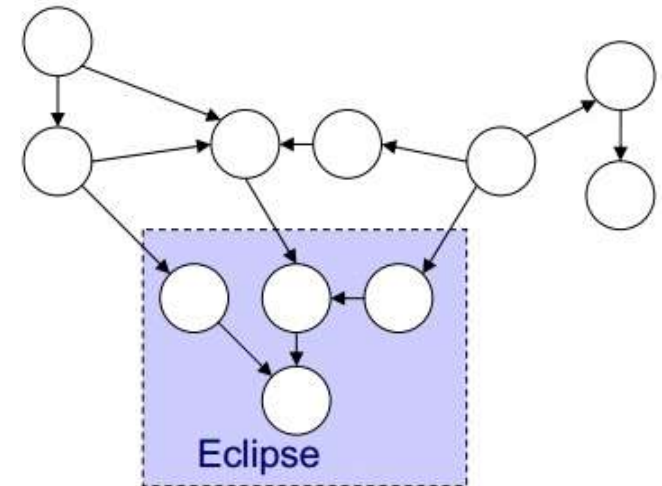
Plug-ins Development

- What's a plug-in?
 - A software component that adds a specific feature to an existing software application
- Standard Java lacks an explicit notion of components
- OSGi Framework
 - Bundle**: a group of Java classes and additional resources equipped with a detailed manifest MANIFEST.MF
 - Life-cycle**: INSTALLED, RESOLVED, STARTING, ACTIVE, STOPPING, or UNINSTALLED
- Equinox
 - Eclipse project that provides a certified implementation of the OSGi
- Eclipse plug-in extension system : possibility to add and customize features
 - All kinds of UI elements
 - Application specific logic



OSGi and Equinox

- **Components == OSGi Bundles == Eclipse Plug-in**
- OSGi support dynamic update and install
- Downstream components can access upstream components through the extension mechanism
 - Downstream component registers (declaratively) an extension point
 - Dependent components register (declaratively) extensions



Eclipse Plug-ins Interactions



Plug-in Development Concepts

- Plug-in
 - Used to group your code into a modular, extendable and sharable unit.
- Feature
 - Used to package a group of plug-ins together into a single installable and updatable unit
- Extensions and Extension Points
 - When a plug-in wants to allow other plug-ins to extend or customize portions of its functionality, it will declare an extension point
 - Plug-ins that want to connect to that extension point must implement that contract in their extension
- Fragment
 - Used to replace or extend the functionality of an existing plug-in
- Target Platform
 - Refers to the plug-ins which your workspace will be built and run against



MANIFEST.MF and plugin.xml

- MANIFEST.MF
 - ID
 - Name
 - Activator class – start() and Stop() methods
 - Execution Environment
 - Runtime dependencies – required plug-ins
 - Exported packages
 - Java classpath
- Plugin.xml
 - Extensions
 - Extension points
 - Build
- Plug-in Registry View



Extension Points

- `<extension`
- `point="org.eclipse.ui.editors">`
- `<editor`
- `name="Sample Multi-page Editor"`
- `extensions="mpe"`
- `icon="icons/sample.gif"`
- `contributorClass="firstplugin.editors.MultiPageEditorContributor"`
- `class="firstplugin.editors.MultiPageEditor"`
- `id="firstplugin.editors.MultiPageEditor">`
- `</editor>`
- `</extension>`



Exercise – Create a multi-page editor



Exercise – Create a pop-up menu action



How Do I Work with Extension Points?

- Find extension points
 - - Documentation
 - - Plugin.xml editor – ‘Add...’
 - - Plug-ins registry editor
 - - Load SDK plug-in as projects with source folders
- Read extension point description
- Look for examples
 - - Existing places where the extension points have been previously used
- Deploying your solution
 - - export wizard via *File* → *Export* → *Plug-in Development* → *Deployable plug-ins and fragments*.