6 Building Application using IDE

Objectives

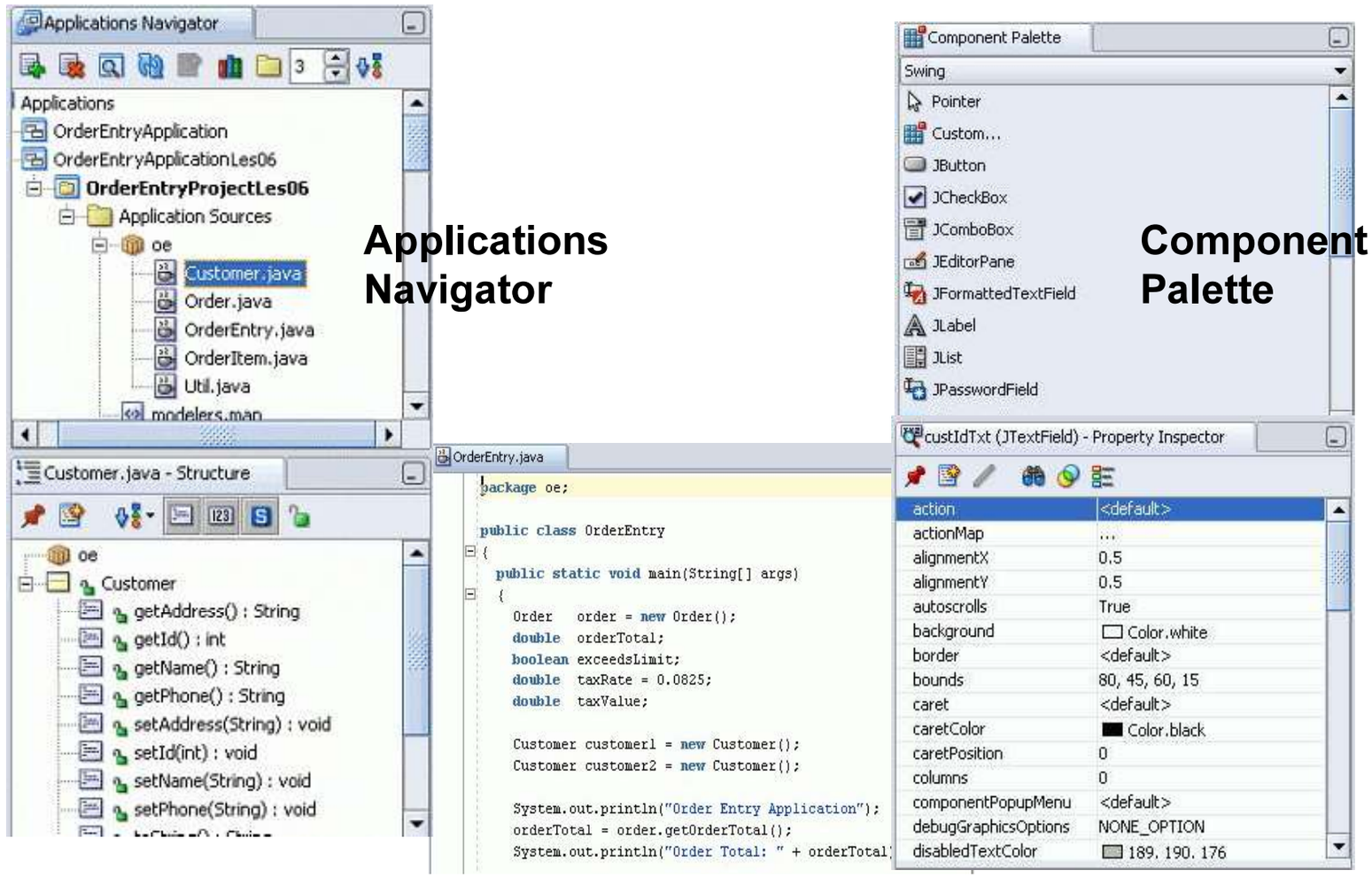
After completing this lesson, you should be able to do the following:

- Create applications and new projects
- Build Java applications in JDeveloper
- Enhance user interface frame design
- Debug applications with the JDeveloper debugger
- Define classes with JDeveloper
- Describe how JDeveloper can be used to build enterprise applications

Oracle JDeveloper (11.1.3.2.0)

- Oracle JDeveloper (11.1.3.2.0) provides an integrated development environment (IDE).
- It enables you to:
  - Build, compile, and run Java applications
  - Use wizards to help build source code
  - View objects from many perspectives: code, structure, layout, and so on

Oracle JDeveloper (11.1.3) Environment



Applications Navigator

Component Palette

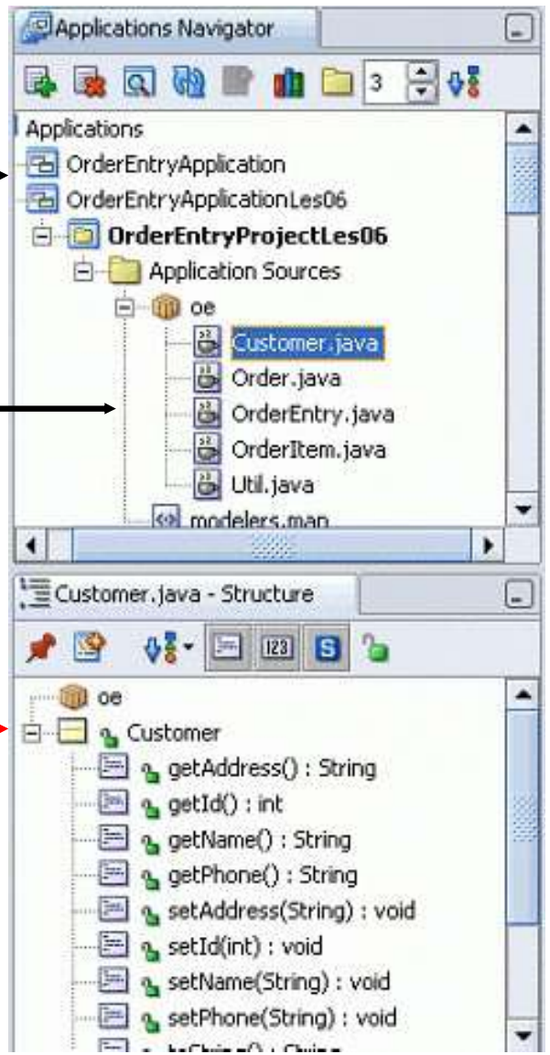
Structure Pane

Code Editor

Property Inspector

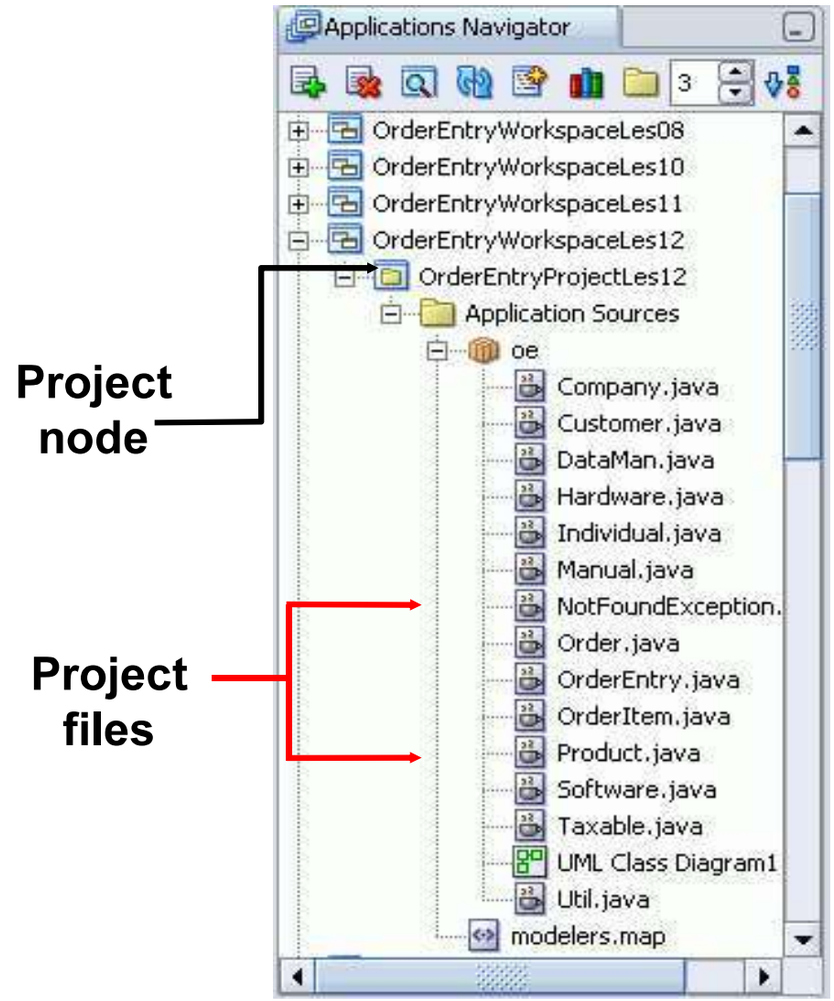
Applications

- May contain multiple projects
- Enable you to view currently used objects



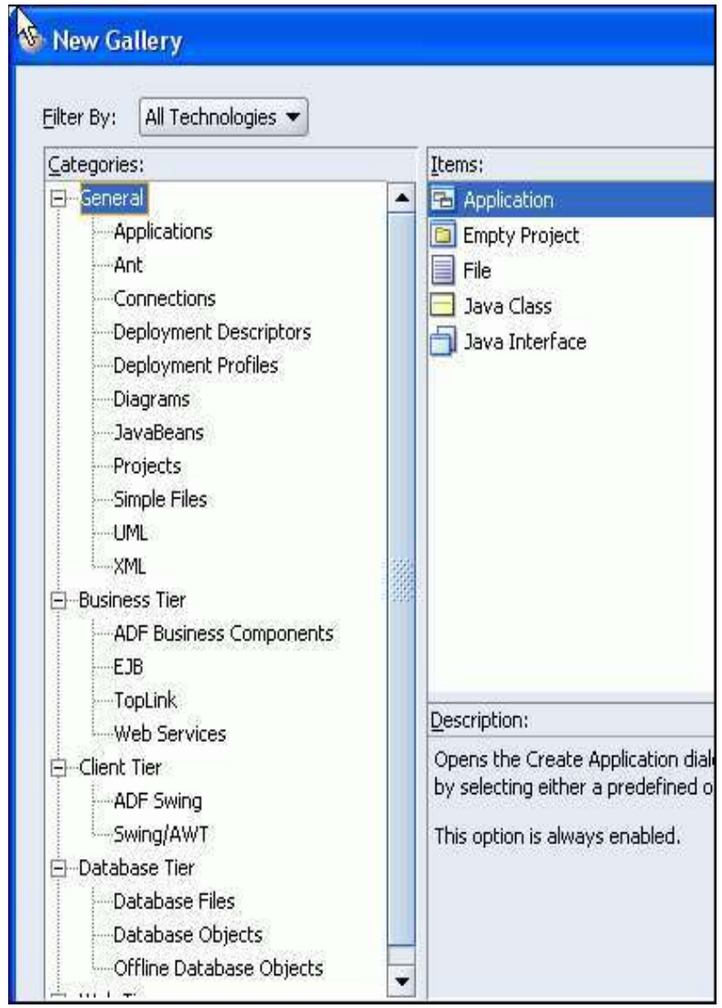
Projects

- Contain related files
- Manage project and environment settings
- Manage compiler and debug options



Creating JDeveloper Items

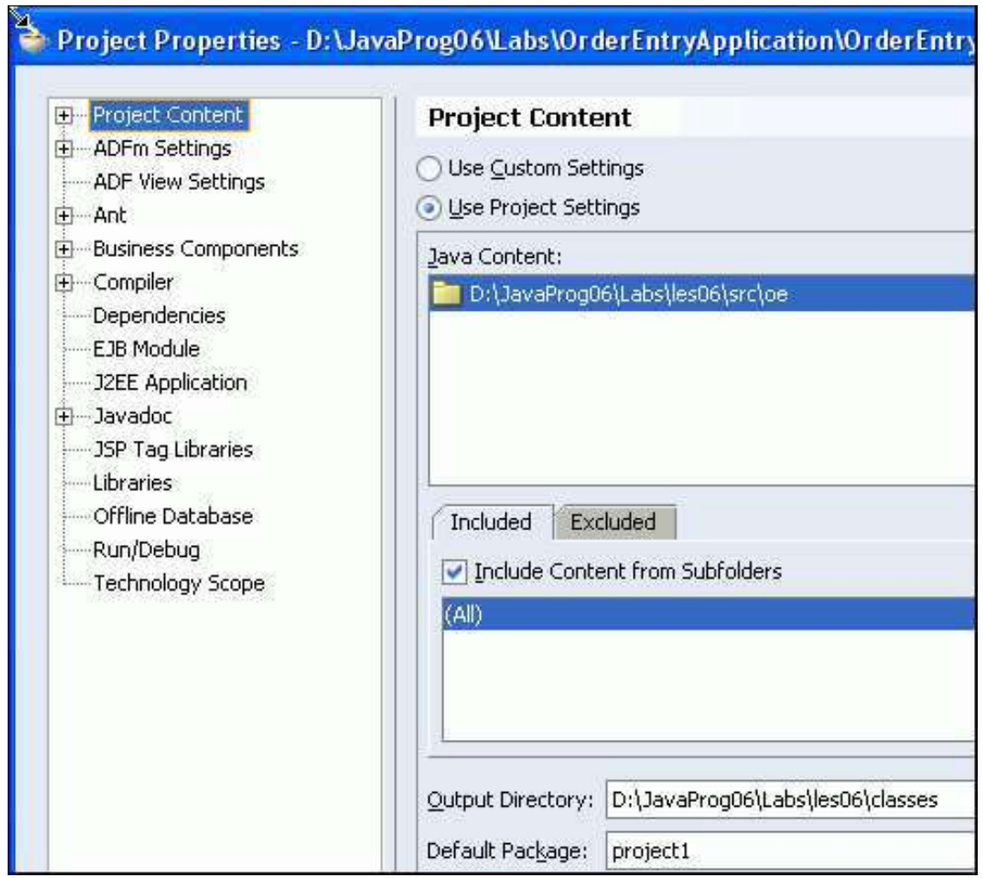
- JDeveloper items are invoked by selecting File > New.
- They are categorized by type:
  - General
  - Business Tier
  - Client Tier
  - Database Tier
  - Integration Tier
  - Web Tier
- Create any JDeveloper element.



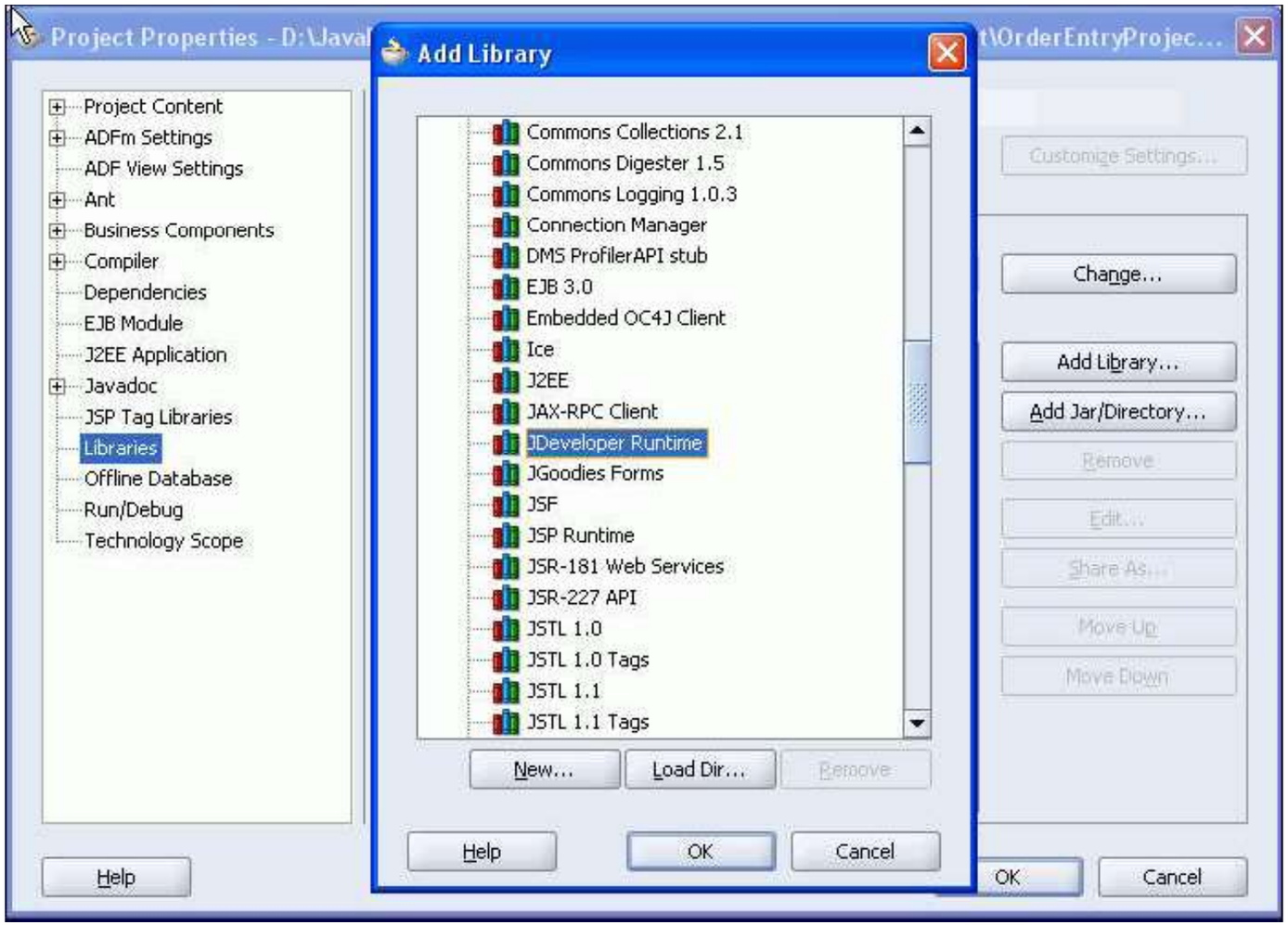
Creating an Application

In the General category, select Application to invoke the Create Application dialog box.

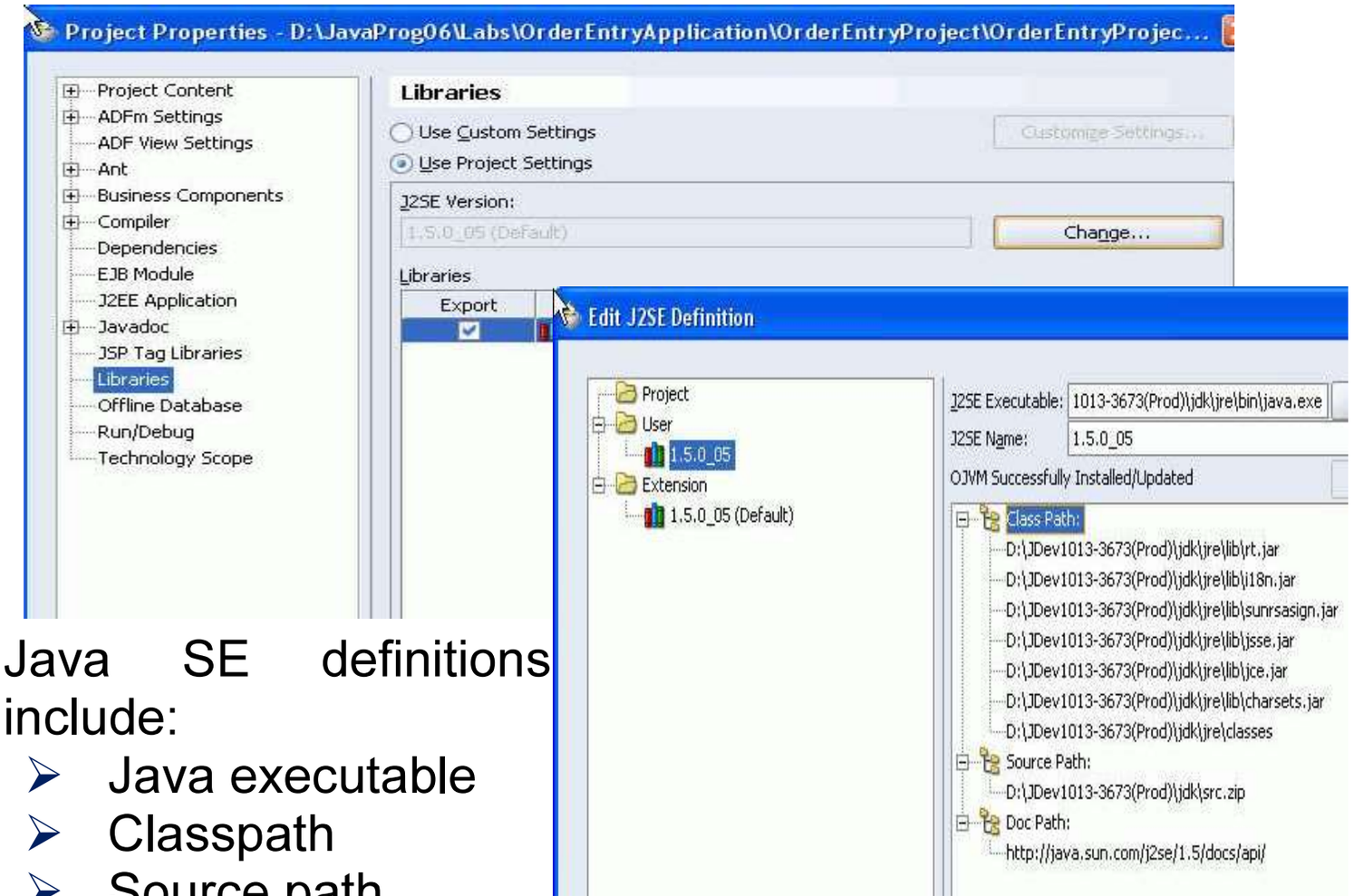
Project Properties : Specifying Project Details



Project Properties : Selecting Additional Libraries



Adding a New Java SE



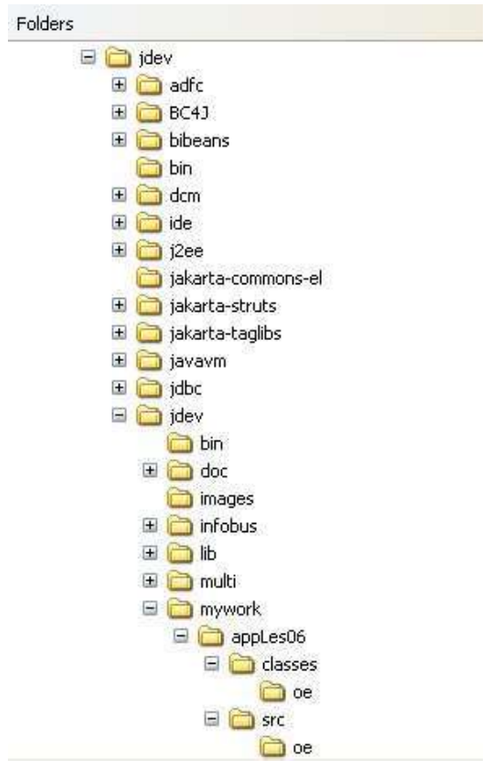
Java SE definitions include:

- Java executable
- Classpath
- Source path
- Doc path

Directory Structure

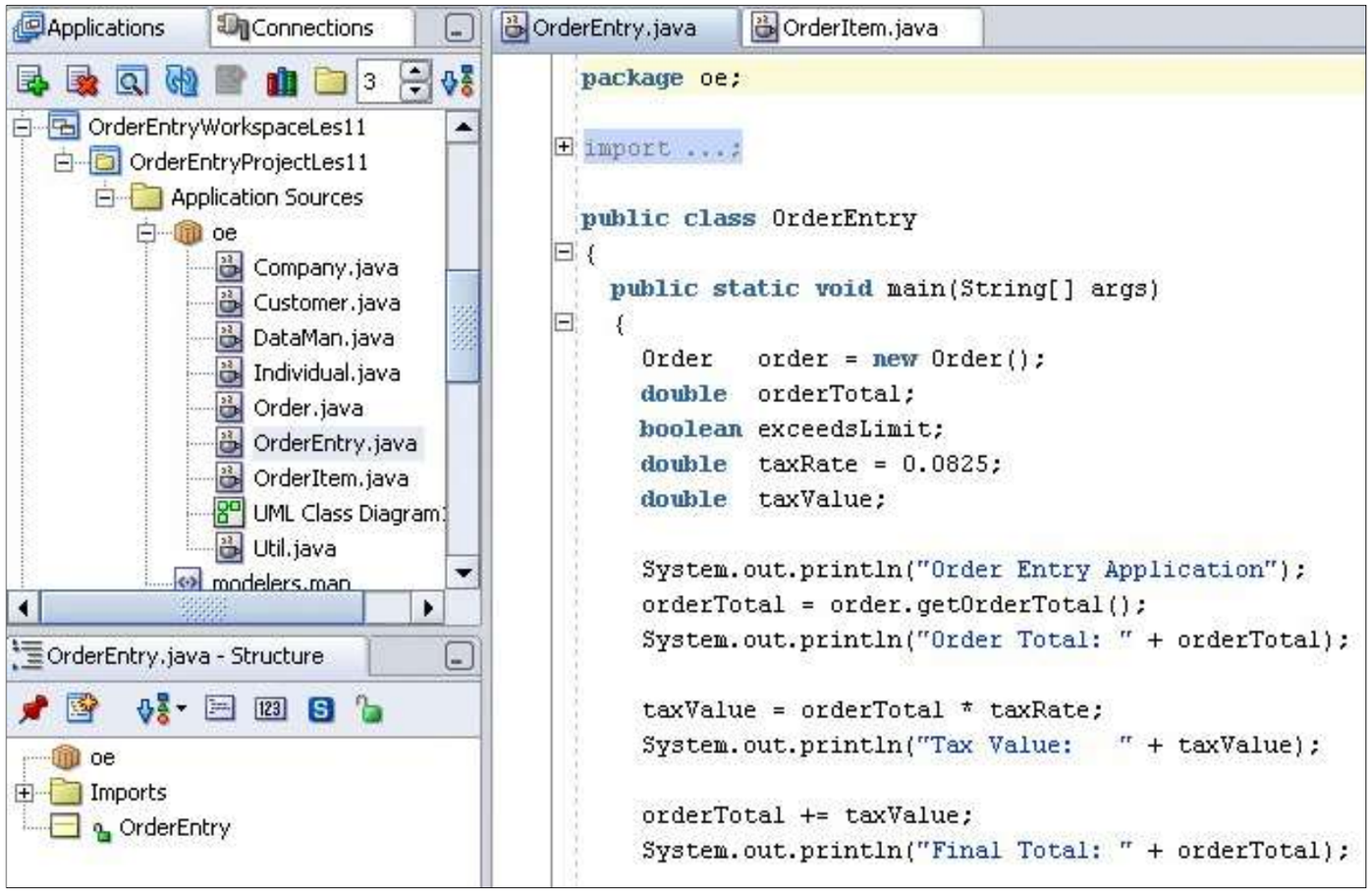
JDeveloper creates and stores `.java` and `.class` files by using the following conventions:

- `<ORACLE_HOME>\jdev\mywork`
- Followed by the application name
- Followed by the project name
  - `\classes\<package name>\`
  - `\src\<package_name>\`
- Followed by `class` and `src` files



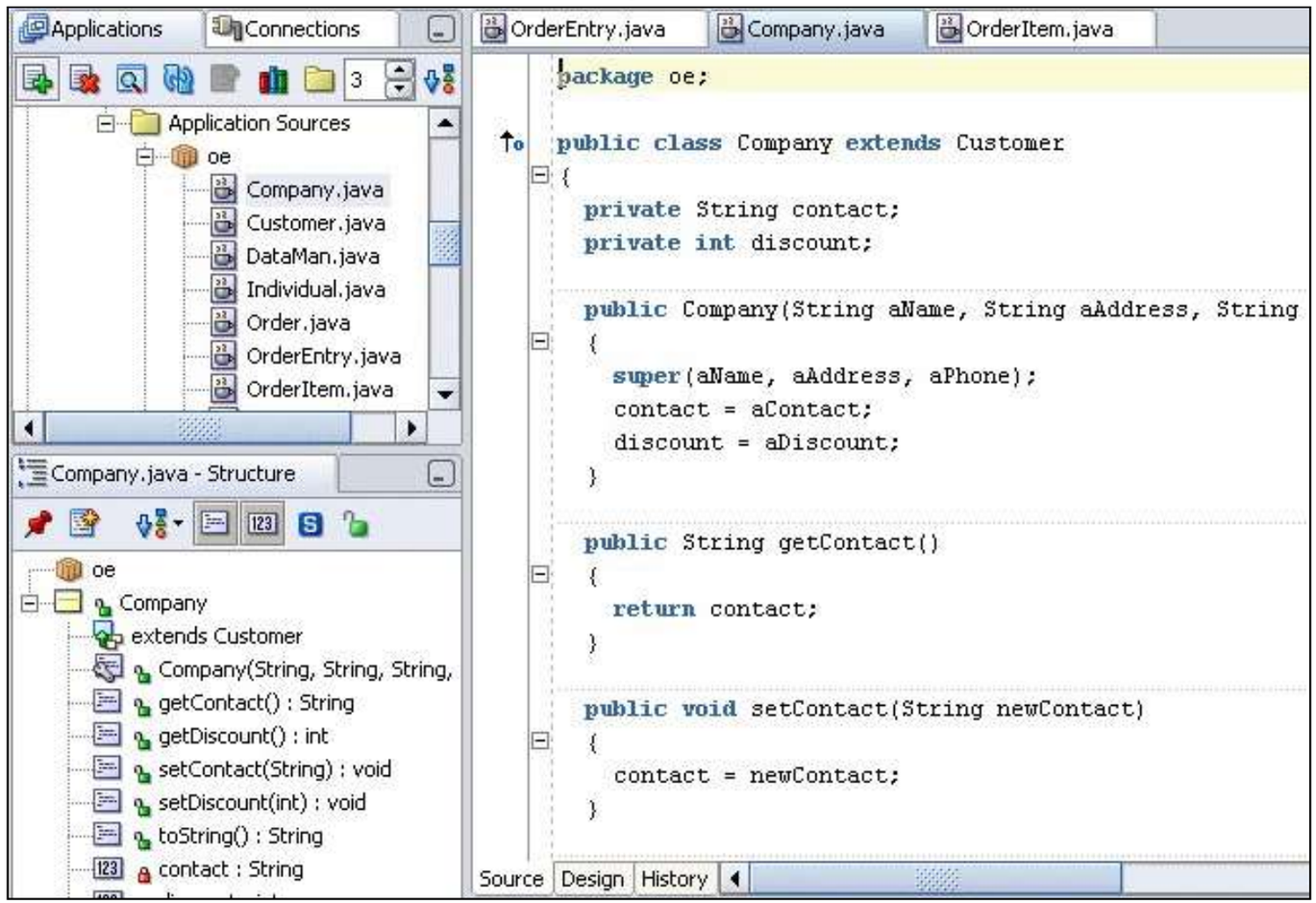
Exploring the Skeleton Java Application

Contains application and frame classes:



Finding Methods and Fields

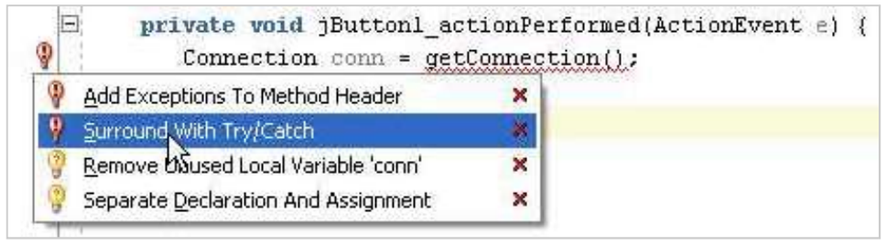
Find methods and fields using the Structure pane:



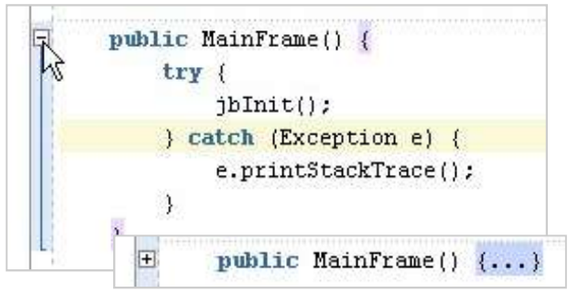
Supporting Code Development

- Improve code quality with Code Coach.
- Evaluate execution stack with the Execution Sample profiler.
- Examine heap memory usage with the Memory profiler.
- Analyze event occurrence and duration with the Event profiler for:
  - JVM events
  - Business components for Java events
  - Custom events

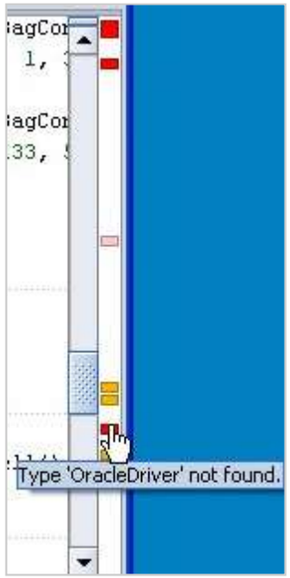
New Code Editor Features



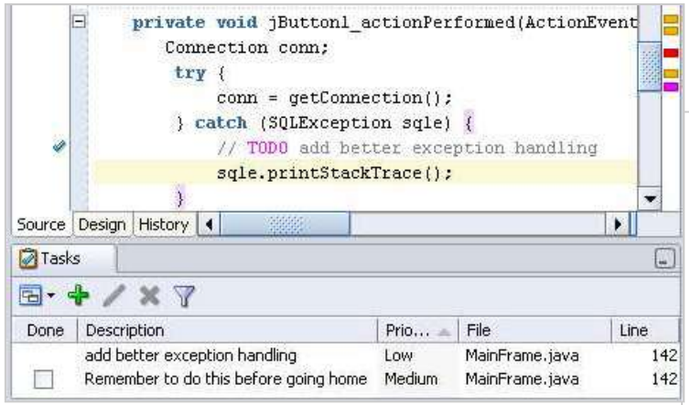
Code Assist



Scope and code folding



Overview margin



Tasks list

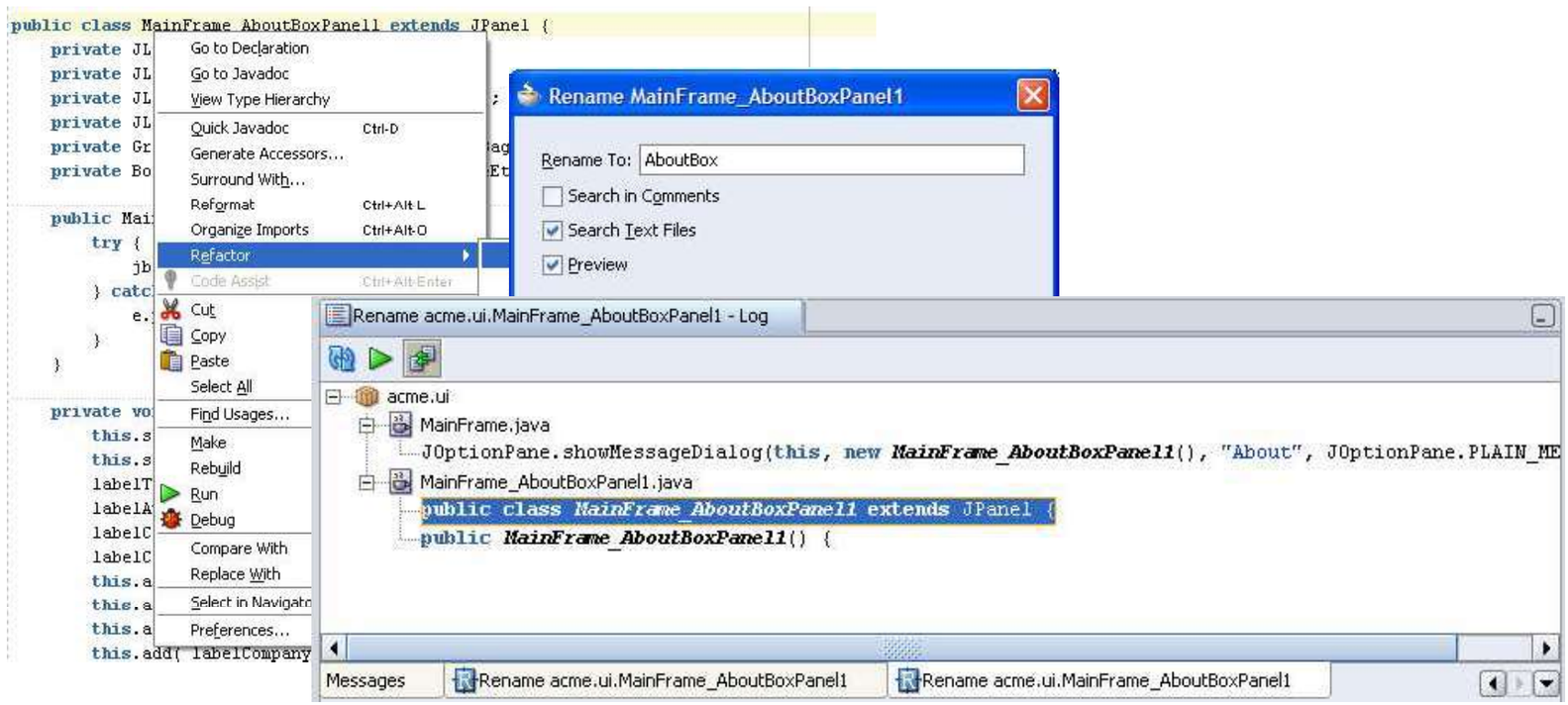
Implements and overrides navigation

Customizing JDeveloper (10.1.3.2.0)

Customize the IDE:

- Look and feel
- General environment
- Dockable windows
- Component Palette
- Preset keymaps

Modify the structure of code without changing its behavior (or breaking it).

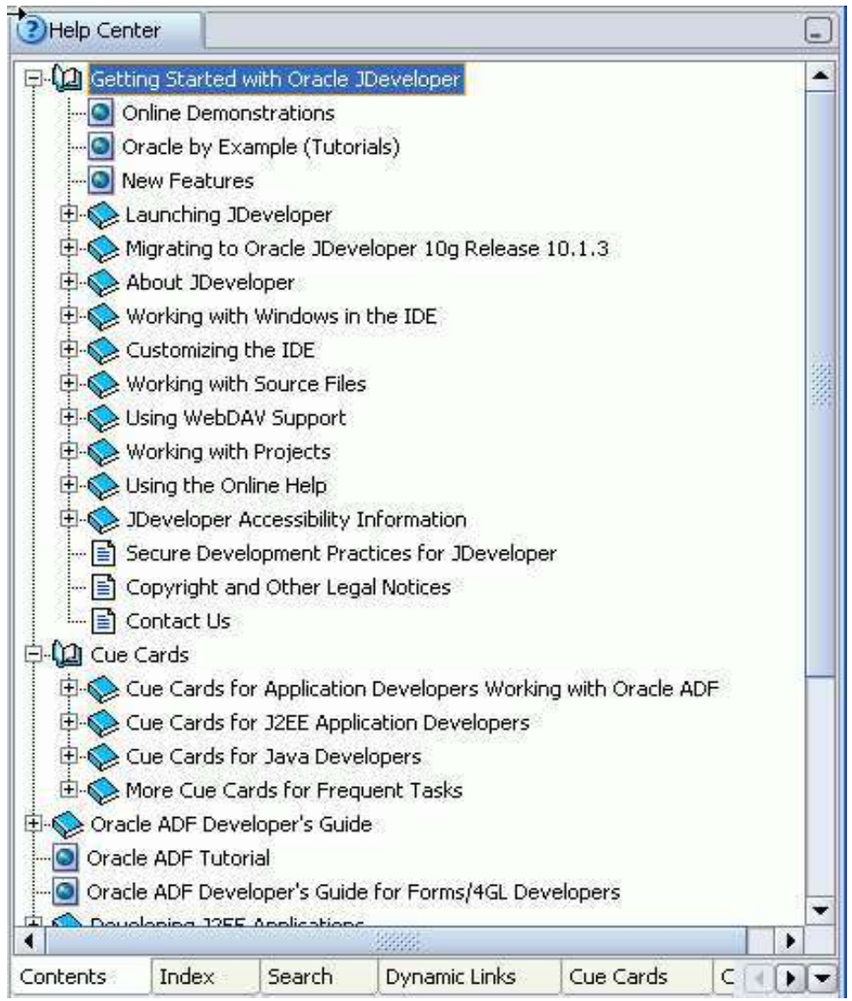


Refactoring

- Drag-and-drop refactoring
- Refactor across entire application
- Refactor across source control
- More than 35 new refactoring operations, including:

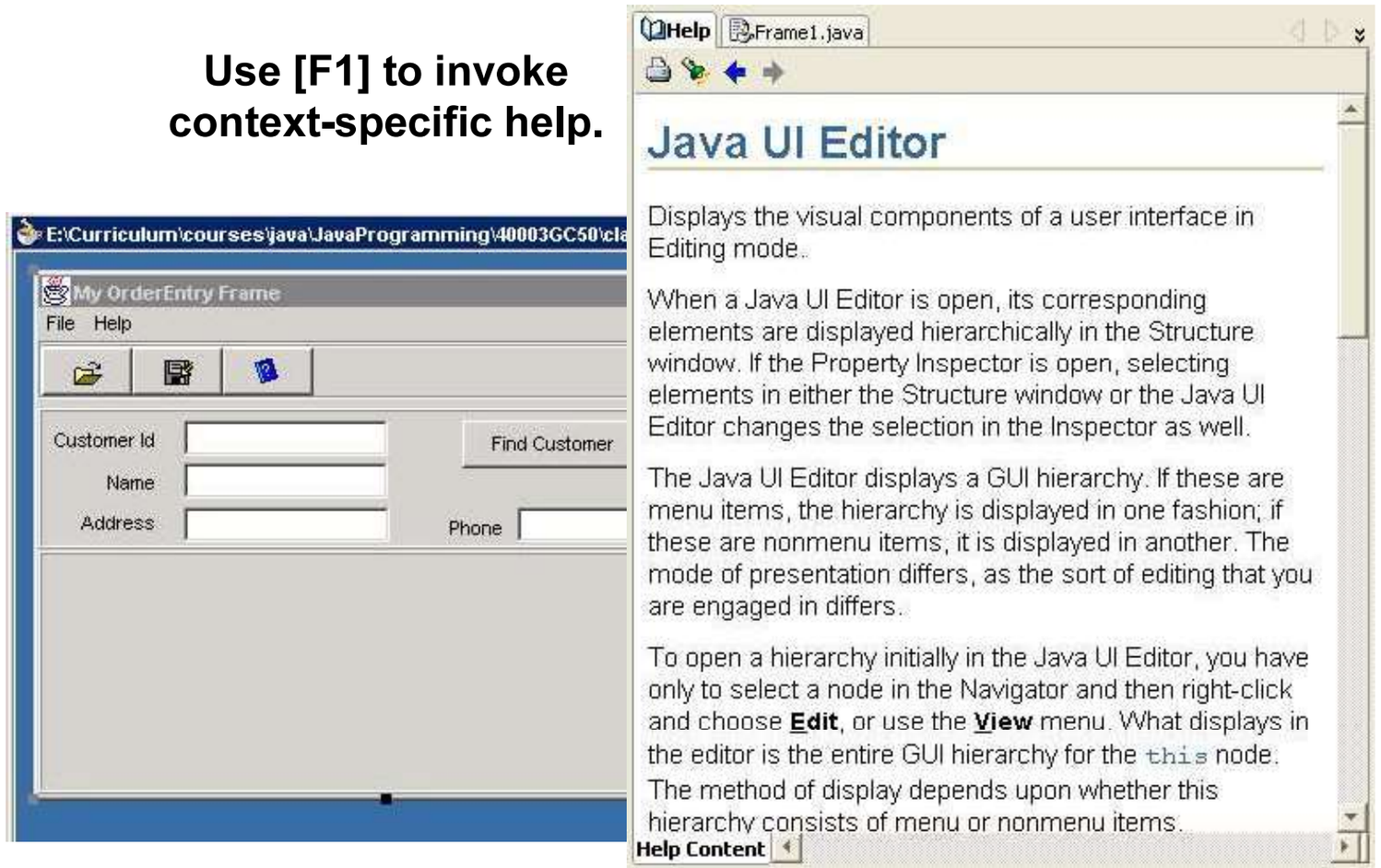
- **Rename Class**
- **Rename Field**
- **Rename Method**
- **Rename Package**
- **Rename Parameter**
- **Change Method Signature**
- **Introduce Variable**
- **Introduce Field**
- **Extract Interface**
- **Use Supertype Where Possible**
- **Move Class**
- **Duplicate Class**
- **Pull Members Up**
- **Safe Delete**

JDeveloper Help System



Obtaining Help on a Topic

Use [F1] to invoke context-specific help.



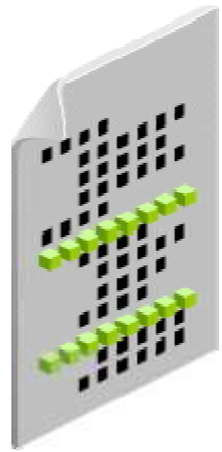
Oracle JDeveloper Debugger

- Helps find and fix program errors:
  - Run-time errors
  - Logic errors
- Allows control of execution
- Allows examination of variables

Breakpoints

Setting breakpoints:

- Manage multiple breakpoints
- Manage conditional breakpoints
- Define columns displayed in window
  - Description
  - Type
  - Status
- Control scope of action
  - Global > Application > Project



Debugger Windows

View debugging information:

- Classes: Displays list of loaded classes and status
- Watch: Evaluates and displays expressions
- Monitors: Displays information about active monitors
- Threads: Displays the names and statuses of all threads
- Smart Data: Analyzes source code near execution point
- … and more

Stepping Through a Program

Use the buttons on the debugger toolbar:

- Start the debugger.
- Resume the program.
- Step over a method call.
- Step into a method call.
- Step out of a method call.
- Step to the end of the method.
- Pause execution.
- Stop the debugger.

Watching Data and Variables

- The Smart Data tab displays analyzed variables and fields.
- The Data tab displays arguments, local variables, and static fields from the current context.
- To watch other variables:
  1. Select a variable in the source window and right-click.
  2. Select Watch... at Cursor from the shortcut menu.
  3. View the variable in the Watch tab.
  4. Right-click a data item to modify it.

Summary

In this lesson, you should have learned that:

- JDeveloper builds, debugs, and runs all types of Java applications
- JDeveloper can be used to develop:
  - Java applications
  - Java servlets
  - JSPs
  - EJBs
- JDeveloper can be used to build enterprise applications

Practice : Overview

This practice covers the following topics:

- Exploring the JDeveloper IDE
- Creating an application and a project
- Populating the project with existing files