



Create a pattern

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Create a pattern

This tutorial guides you through the steps used to create a new pattern. You can watch the pattern being created. This tutorial plays in a video format, which you can operate through playback controls. You can pause, advance, or reverse the tutorial at any time by using the controls on the control bar.

Learning objectives

The objective of this tutorial is to learn how to create patterns. In this tutorial, you will learn the following tasks:

- How to locate and open the Pattern Authoring view.
- How to create a pattern project.
- How to use the Pattern Authoring view to create the basic pattern structure.
- How to add parameters to the pattern template.
- How to modify the pattern code to add more functionality.

If you are not familiar with patterns, you can learn about applying patterns by completing the related pattern cheat sheets or the Apply a pattern tutorial. You can access cheat sheets and the Tutorials Gallery from the **Help** menu.

Time required

30 minutes

Related information

[Authoring patterns](#)

[Patterns to apply](#)

[View the PDF version](#)

Introduction: Create a pattern

Using the Pattern Authoring view, you will learn how to create the basic pattern structure.

This tutorial might require some optionally installable components. To ensure that you have installed the appropriate optional components, see the System requirements list.

Patterns are created using the Pattern Authoring view. Pattern authors should have a basic knowledge of Java code. Because patterns are created as plug-ins, a basic knowledge of plug-in development is beneficial. After you created a new pattern, you can use the Pattern Explorer view to organize, select, and apply patterns.

Learning objectives

The tutorial is divided into four lessons. The beginning lessons help you to create a pattern project and a new pattern. After creating the pattern, you will learn how to add parameters to the pattern. Last, you can see how to modify the code to add more functionality to a pattern.

Time required

This tutorial should take approximately 30 minutes to finish. If you explore other concepts related to this tutorial, it could take longer to complete.

Skill level

Advanced

Audience

The intended audience for this tutorial is developers.

System requirements

To complete this tutorial, you need to have the following tools and components installed:

- Pattern authoring

Prerequisites

To perform the steps in this tutorial, you should be familiar with the following concepts and tasks:

- Basic pattern concepts and terminology such as pattern types, template parameter definitions for patterns, binding, argument values, and collaborations
- Basic visual modeling functions such as creating a class in the Project Explorer view or in a diagram
- Some knowledge of programming concepts and terminology, preferably Java™
- How to navigate the Eclipse workbench
- Industry definitions and uses of design patterns

Lesson 1: Create the patterns project

This lesson guides you through the steps to create a patterns project.

A pattern, when completed, is a plug-in. A plug-in project is required to create a pattern. Ensure that the Modeling perspective is open.

If you would like to view this lesson before you perform the steps, click:

Show Me

To create a patterns project:

1. Click **File** → **New** → **Project**. The New Project window opens.
2. Expand **Plug-in Development**. Click **Plug-in Project**, and then click **Next**. The New Plug-in Project wizard opens.
3. In the **Project name** field, type the name of your new project and click **Next**. The Plug-in Content page opens.
4. Accept the default values on this page and click **Next**. The Templates page opens.
5. Select **Plug-in with Patterns** and click **Next**. The Pattern Library page opens.
6. Click **Finish**.
7. If the Open Associated Perspective window opens, click **Yes**. The Pattern Authoring view opens and the Package Explorer view displays your new patterns project.

Now that you have created your patterns project, you can start creating a new pattern using the Pattern Authoring view.

Lesson 2: Create the new pattern

This lesson guides you through the steps to create a new pattern using the Pattern Authoring view.

Before you begin, you must have created the patterns project as detailed in Lesson 1: Create the patterns project.

Patterns are created using the Pattern Authoring view. To organize, select, and apply patterns, you can use the Pattern Explorer view.

If you would like to view this lesson before you perform the steps, click:

Show Me

To create a new pattern:

1. In the Package Explorer view, expand your patterns project. The PatternLibrary class has been added to your patterns project.
If you do not see your project in the Package Explorer view, return to Lesson 1: Create the patterns project.
2. Right-click the pattern library in the Pattern Authoring view and click **New Pattern**. The New pattern window opens.
3. Type the name of your new pattern, class, and package, and select the pattern type.
 - a. Type the new pattern name on the **General** page, in the **Pattern Name** field.
 - b. Type the name of the class on the **General** page, in the **Class Name** field.
 - c. On the **General** page, in the **Package** field, remove the pattern name that was added at the end of the package name.
 - d. On the **General** page, in the **Target Types** field, select the type for your pattern.
 - e. On the **General** page, in the **Groups** field, click **Remove** to remove the default group name.
 - f. Click **Add** to add a new group name. The Add Group window opens. Type the name of your group in the **Group** field.
 - g. Click the **Detail** tab to add pattern documentation and search keywords. The keywords represent the pattern and assist the user in finding the pattern when searching in a RAS pattern repository.
 - h. Click **OK**.

The new pattern is displayed in the Pattern Authoring view. A Java class is added to your new pattern package. The new pattern folder contains a new UML model for the pattern. The new pattern folder also contains a new RAS manifest for the pattern.

Lesson 3: Add parameters to the pattern template

In this lesson, you will add parameters to a pattern template using the Patterns Authoring view.

Before you begin, you must complete Lesson 2: Create the new pattern.

If you would like to view this exercise before you perform the steps, click: Show Me

To add parameters to a pattern:

1. To add a parameter to the pattern template, right-click the new pattern that was added in Lesson 2 and that is now displayed in the Pattern Authoring view.
2. Select **New Parameter**. The New Pattern Parameter window opens.
 - a. Type the name of the parameter on the **General** page, in the **Name** field.
 - b. Click **Browse** to select the UML type for the parameter. The Parameter Type window opens.
 - c. Select the type of your parameter and click **OK**.
 - d. Select the multiplicity value on the **General** page, in the **Multiplicity** field.
 - e. Click **OK**.

The new parameter is displayed in the Pattern Authoring view.

You are ready to add new functionality to the pattern.

Lesson 4: Add new functionality to the pattern

This lesson shows how to add new functionality to the pattern through modifying the pattern code.

Before you begin, you must complete Lesson 3: Add parameters to the pattern template.

If you would like to view this lesson before you perform the steps, click: [Show Me](#)

To add new functionality to the pattern:

1. Double-click the Package Explorer tab, for a better view of the code.
2. Modify the results of the pattern application. Modify the code in the hot-spots to add new functionality to the pattern.

The Patterns Framework provides for much of the processing that is common across patterns. The pattern authoring tools also generate the Java source code that makes calls into, and is called by, the framework.

Summary: Create a pattern

You have learned the basics needed to create new patterns.

Lessons learned

If you have completed all the lessons, you should now be able to create a new pattern, add new parameters to the pattern, and perform the following tasks:

- Locate and open the Pattern Authoring view.
- Create a pattern project.
- Create a pattern.
- Add parameters to the pattern template.
- Modify the pattern code to add more functionality.

Additional resources

If you want to learn more about the topics covered in this tutorial, consider the following sources:

- Authoring patterns topics in the online Help system
- Applying patterns topics in the online Help system
- White papers from the developerWorks® Web site

Related information

Building SOA applications with reusable assets: Reusable assets, recipes, and patterns

Building SOA applications with reusable assets: SOA recipe reference example

Building SOA applications with reusable assets: SOA recipe reference example
eclipse.org