Visual ◆ Paradigm

How to Draw UML Diagrams in NetBeans?
Written Date : March 15, 2016

Tired of switching between your favourite IDE to modelling environment to get work done? Also feeling troublesome to sync between code and visual models in two separated development environments? Visual Paradigm seamlessly integrated with NetBeans, providing full support of round-trip code and database engineering. Developers can now perform full lifecycle development activities with NetBeans, such as analysis, design modelling, code engineering, agile teamwork development and much more!

Visual Paradigm is award-winding agile development platform that encompasses of widely-used agile toolset such as user story, use case, UML visual model, coding engineering, teamwork and project management capabilities. This one-stop-shop solution enables developers to carry out the entire agile development process within one place.

Preparation
In order to follow and complete this tutorial, you must have Visual Paradigm installed. They can be downloaded from Visual Paradigm download page. Of course, you need the NetBeans IDE as well. We suppose you have already installed it but if you haven't, please download it from the NetBeans official site get it installed.

Note: We only support NetBeans 6.7 or upper versions. If you are using an earlier version, please consider upgrading your NetBeans.

Visual Paradigm targets software teams who want to develop software with professional design, reporting, code and database engineering supports. It supports all sorts of UML modeling features, Business Process Modeling with OMG's Business Process Modeling Notation (BPMN), ERD (for database design), code generation, reverse engineering, database generation/reversal, Hibernate, report composer and report generation.

Integrate Visual Paradigm with NetBeans
Integrate your used canned new integrate of Visual Paradigm. So, turn off your NetBeans and start Visual Paradigm. Perform the steps below.
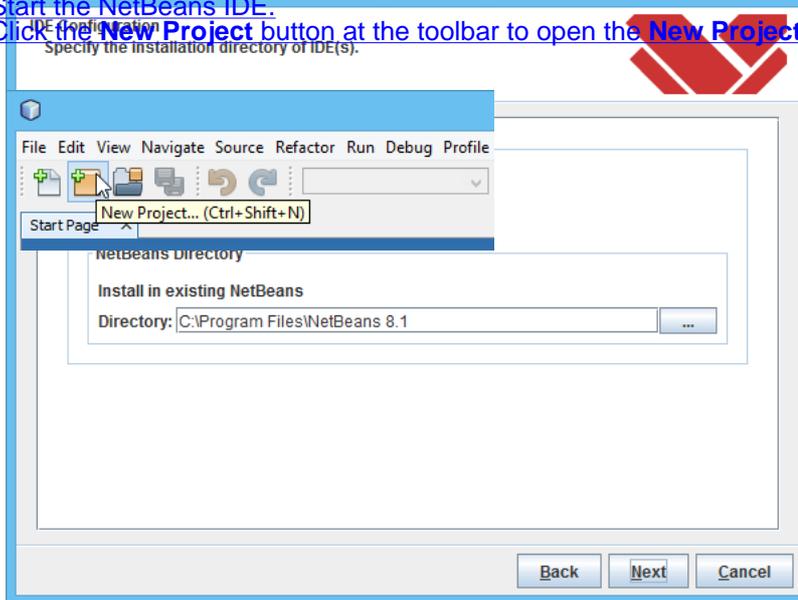
1. In Visual Paradigm, select **Window > Integration > IDE Integration...** from the application toolbar.
2. In the **Visual Paradigm IDE Integration** window, check **NetBeans Integration**. Click **Next**.
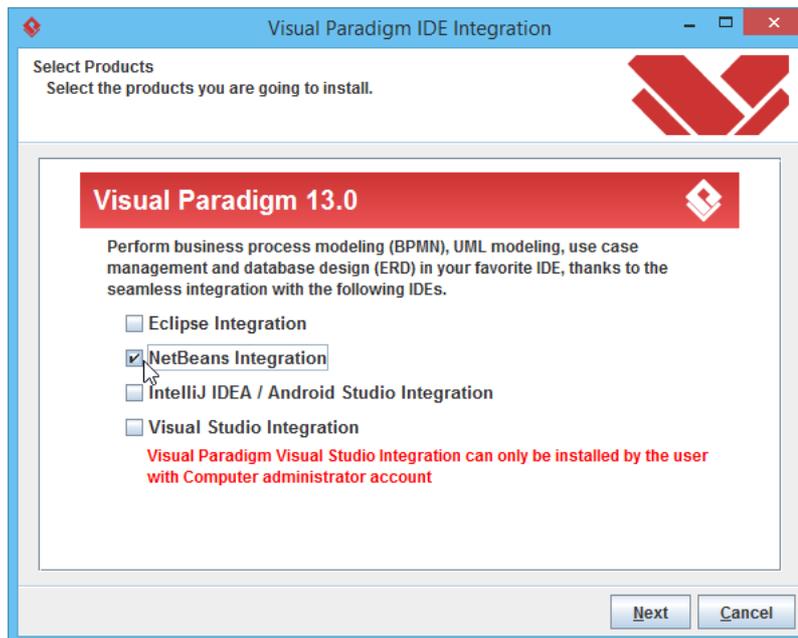
3. Specify the path of your NetBeans installation and click **Next**.

**Creating a UML Model for your Java project**

In this tutorial, we are going to create a UML model for a Java project in NetBeans. In order not to mess up with your production work, we will create a new Java project for this tutorial.

1. Start the NetBeans IDE.
2. Click the **New Project** button at the toolbar to open the **New Project** window.

File Edit View Navigate Source Refactor Run Debug Profile

New Project... (Ctrl+Shift+N)

Start Page

NetBeans Directory

Install in existing NetBeans

Directory: C:\Program Files\NetBeans 8.1

Back | Next | Cancel

This begins files copying. If you see the error messages "java.io.IOException: Cannot make dirs for file...", please restart Visual Paradigm with the **Run as Administrator** option. When finished files copying, close Visual Paradigm and move on to the next section to see how to create a Java application in NetBeans along with UML model.

3. In the **New Project** window, select **Java** category and choose **Java Class Library** as the
4. Enter *Online Shop* in the **Project Name** field. Leave other settings as default and click **Finish** to
project type. Click **Next.**
create the project.
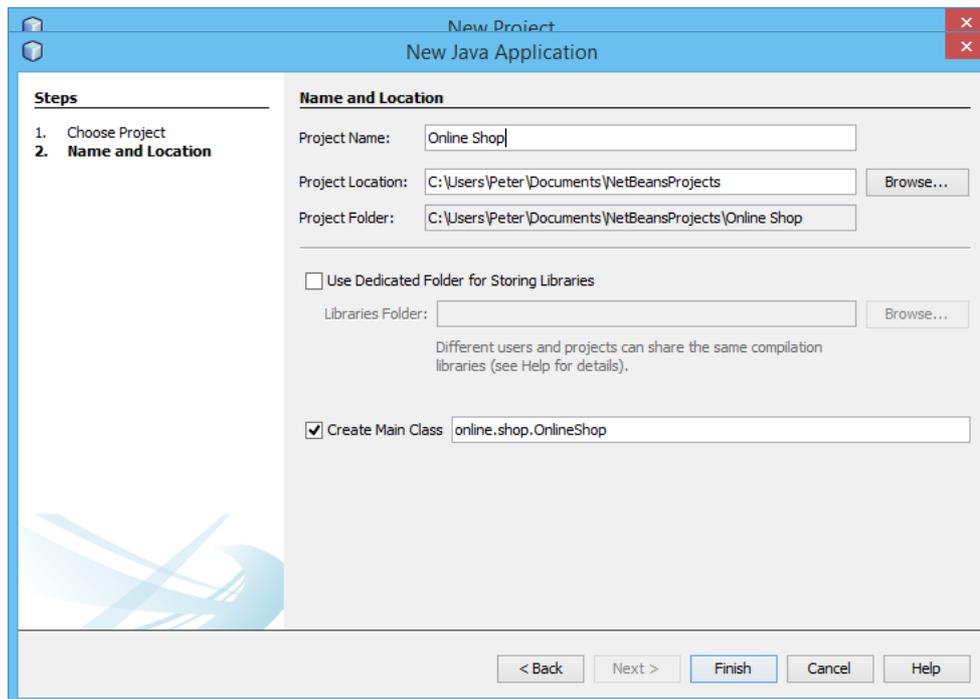
5. Now, you have an empty Java project. Let's create a UML model from it. To create a UML model, right-click on the project root node in the **Projects** pane and select **Open Visual Paradigm** from the popup menu.

6. When you are prompted to enter the path of project file, keep **Create in default path** selected and click **OK**. This will create the .vpp project file in the Java project folder. We will model the system with UML and then we will generate Java code from it in the next section.
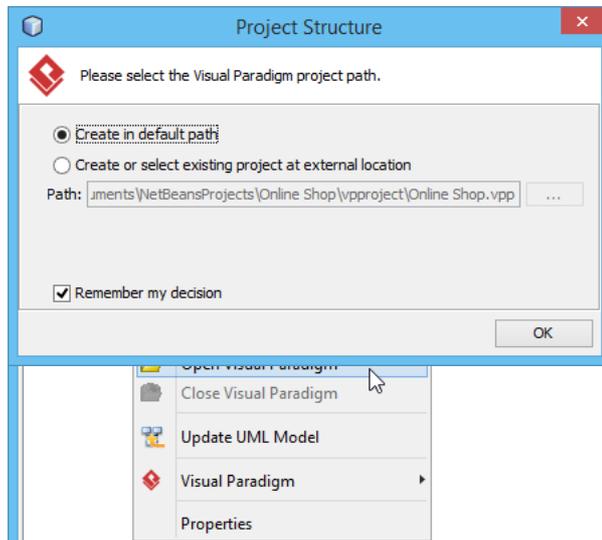
1. Open the **Diagram Navigator** of Visual Paradigm.
2. Right-click on the **Class Diagram** node and select **New Class Diagram** from the popup menu. This creates an empty class diagram.
3. The diagram will automatically grab focus on its package header (top left of diagram). This allows you to specify the parent package for your diagram. If the package you specified does not exist in your project, it will be created for you automatically. Once you have specified the package, the class diagram along with the classes to be created in the diagram will automatically be put in the package. Enter *onlineshop* as package name and press **Enter**.
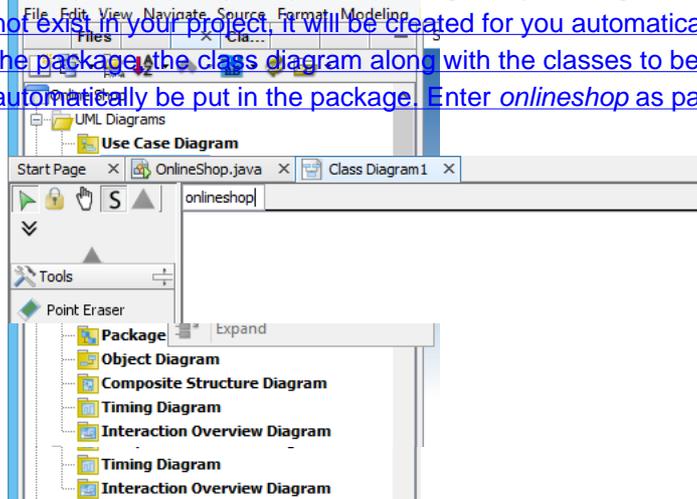
4. Now, the focus will be shift to the diagram name field. Enter *Online Shop* as the name of the diagram and then press **Enter**.

5. Next, we are going to create a class. Select **Class** from the diagram toolbar and it onto the diagram to create a class.

6. Enter *Product* as name and press **Enter** to confirm.

7. A product has three attributes: name, partNo and price. Let's add them. Right-click on the *Product* class and select **Add > Attribute with Getter and Setter** from the popup menu.
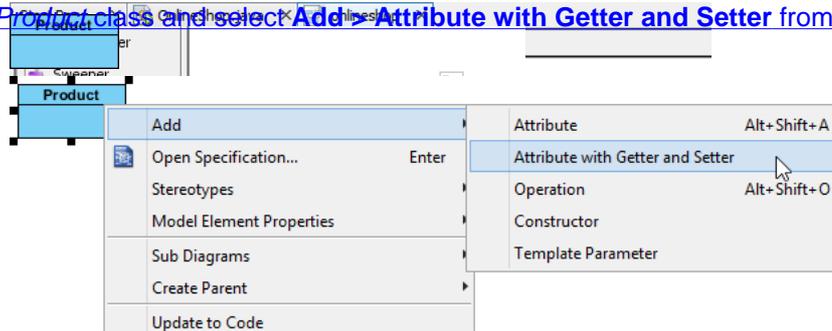
8. Enter *name : String* to create the name attribute in String type. Then, press **Enter** to confirm.
9. Press **Esc** to cancel the next attribute.

Right after your confirmation, the getter and setter operations for the name attribute will

Generate Java code from class diagram

let's try the one that generate code for the entire UML model. Click on the **Update Code** button at the top of **Diagram Navigator**.
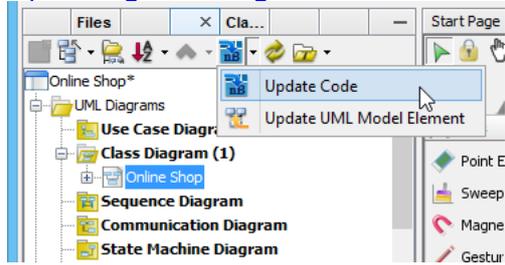
In the **Projects** pane, expand the project node and check **Source Packages**. The package *onlineshop* and *Product* class are there. Open **Product.java**, you can see the *Product* class filled with attributes and its getter and setter.
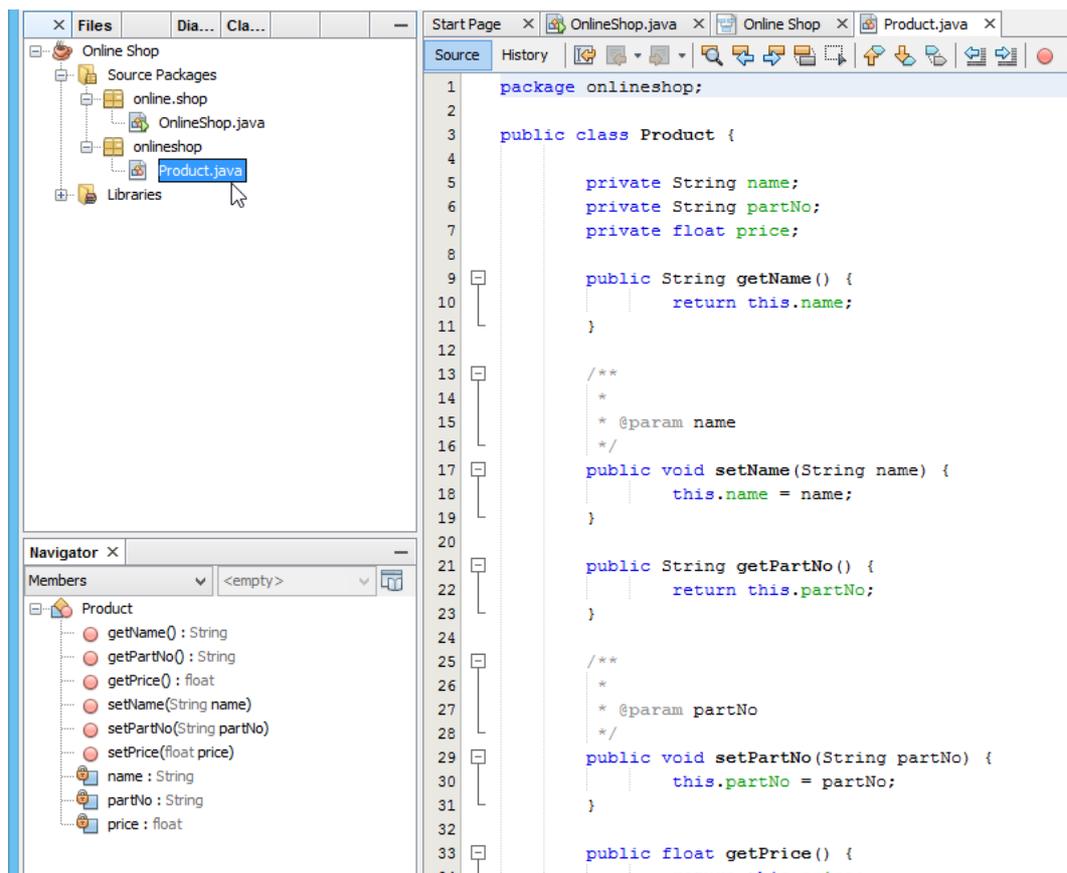
Generate and update UML classes from Java code

You've probably want to know how to produce UML class model from your Java source code which is essential to keep the design conformed to your source code, you need to perform the steps below.

1. Let's create a class in NetBeans. Right-click on the package **onlineshop** and select **New > Java Class...** from the popup menu.

2.   In the **New Java Class** window, enter *Vendor* as class name and click **Finish**.
3.   Add two attributes to the *Vendor* class, a *name* in String type and a collection of *Product*.
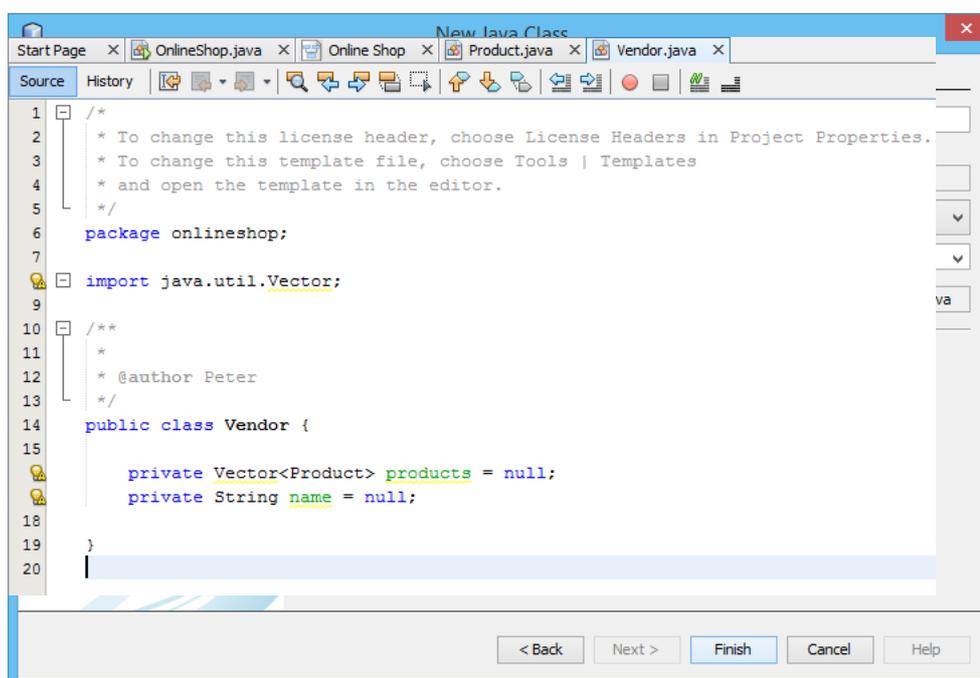
4. Next, we try to update the *Product* class which is just generated in the previous step. Let's try to add a constructor to it. Right-click on the source file of *Product* class and select **Insert Code**.
5. Select **Constructor...** from the popup pane.
6. Select all three attributes and click **Generate** to generate the constructor.
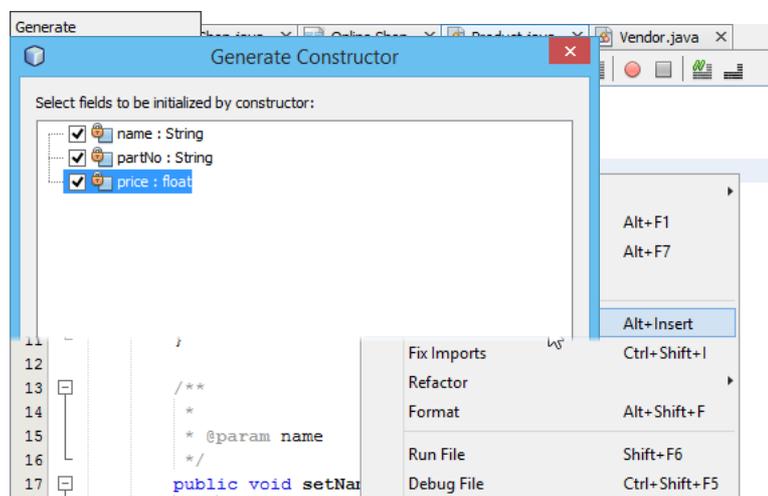
7. Now, go to the **Diagram Navigator**. Click on the **Update UML Model Element** button to have
8. Open the class diagram. The constructor method is presented in the *Product* class.
9. Switch to **Model Explorer** pane, you can find the *Vendor* class inside the *onlineshop* package.
   Drag out the *Vendor* class and drop it to class diagram, the *Vendor* class will be visualized with
   association with *Product* class.
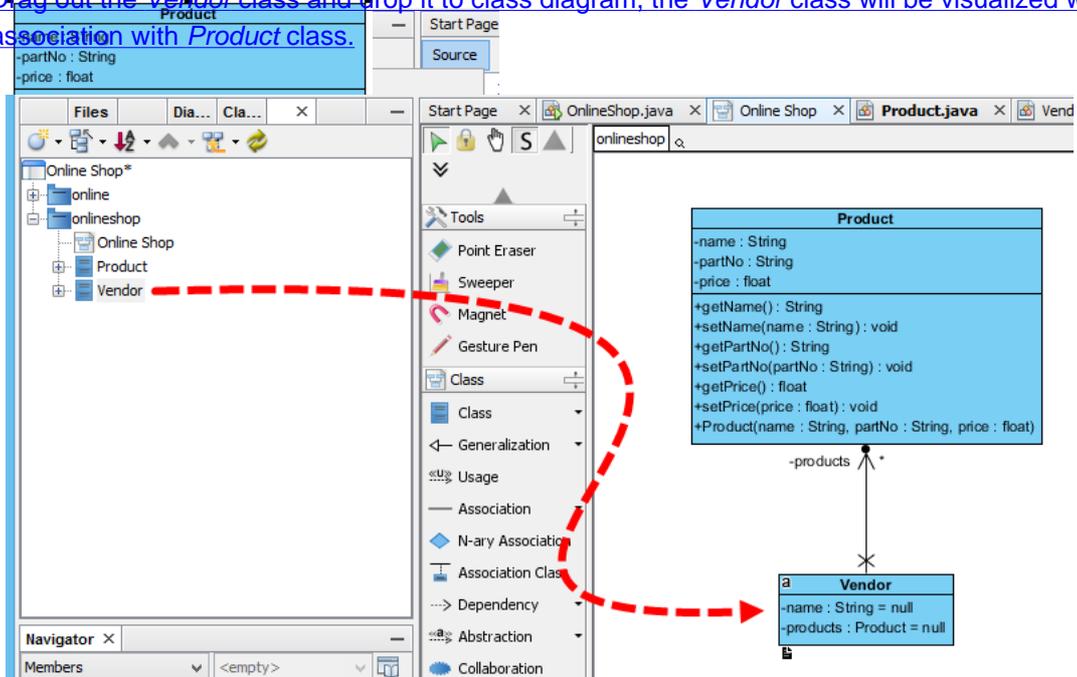
Something more: Generate UML Sequence Diagram from Java code

Sequence diagram helps you to visualize how does your class interact. However, what about its dynamic behavior? Sequence diagram is one of the popular diagrams in UML used to model the dynamic behavior of a system. You can reverse engineer Java source code into sequence diagram inside the NetBeans integration environment. Let's walk through the steps below to create a sequence diagram from source code. Before you start, please note that the classes drawn in the previous sections will be overwritten by the steps to be performed.

1. Select **Modeling > Instant Reverse Java to Sequence Diagram...** from the menu.
2. Click the **Add Source Folder** button in the **Instant Reverse Java to Sequence Diagram** window.
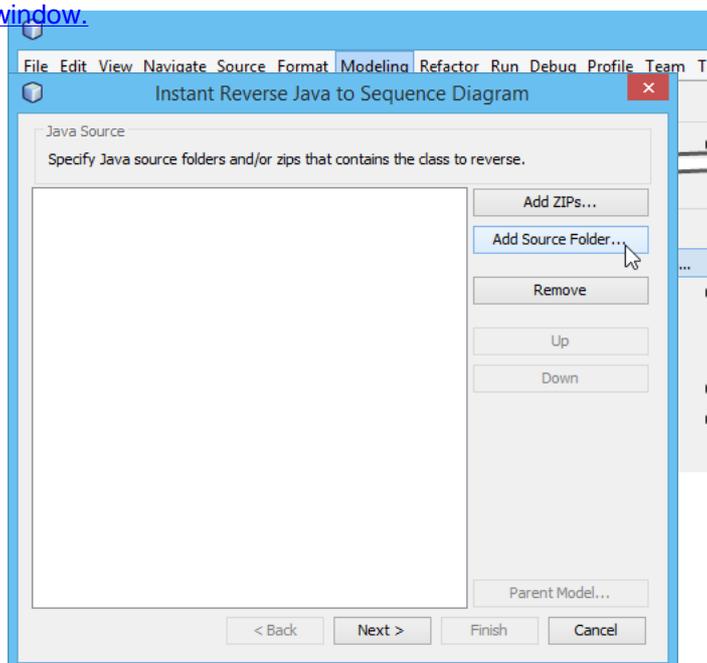
3. Specify the source folder of the Java project in the **Select Directories** window. Click **OK** and then click **Next**.

4. Now, expand the tree in the **Select Operation** step and choose the operation you would like to reverse to sequence diagram. Click **Next** to proceed.
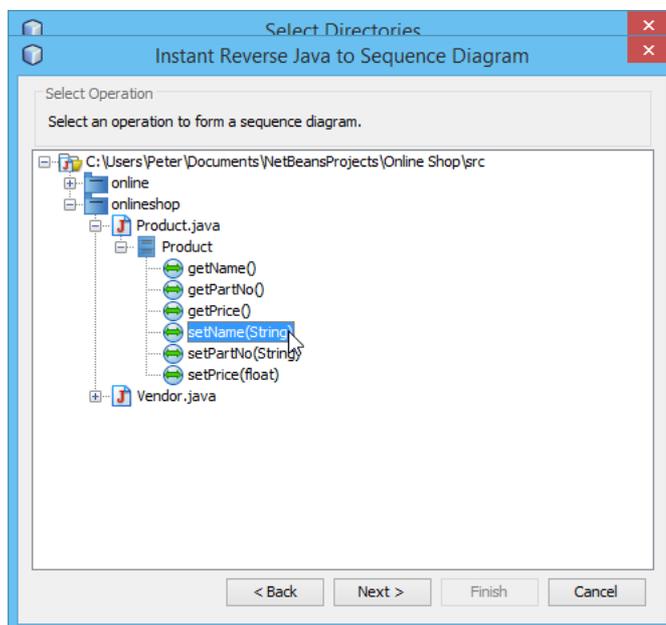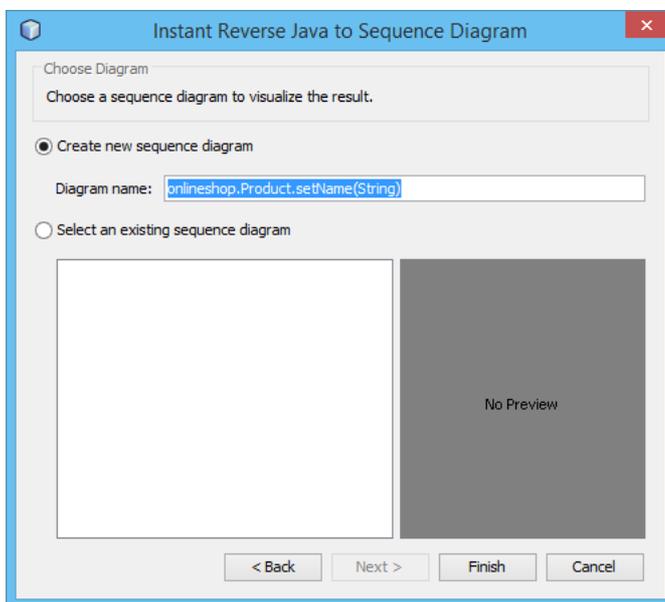
Perform UML Modeling in NetBeans with Visual Paradigm

Related Links
- Visual Paradigm User's Guide - NetBeans Integration
- Tutorials on Visual Paradigm IDE Integration
- Full set of UML tools and UML diagrams

5. Select **Create New Sequence Diagram** in the **Choose Diagram** step and leave the diagram name as default. Click **Finish.**

What this tutorial on YouTube

Now the sequence diagram of your selected operation is being generated.
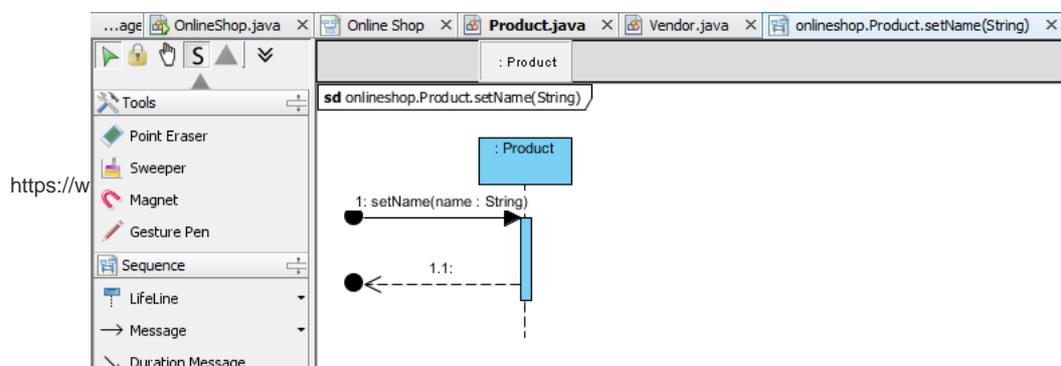
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