

Custom Design Patterns in the NetBeans UML Module

“Three Step Wizard” Custom Design Pattern (the long demo)

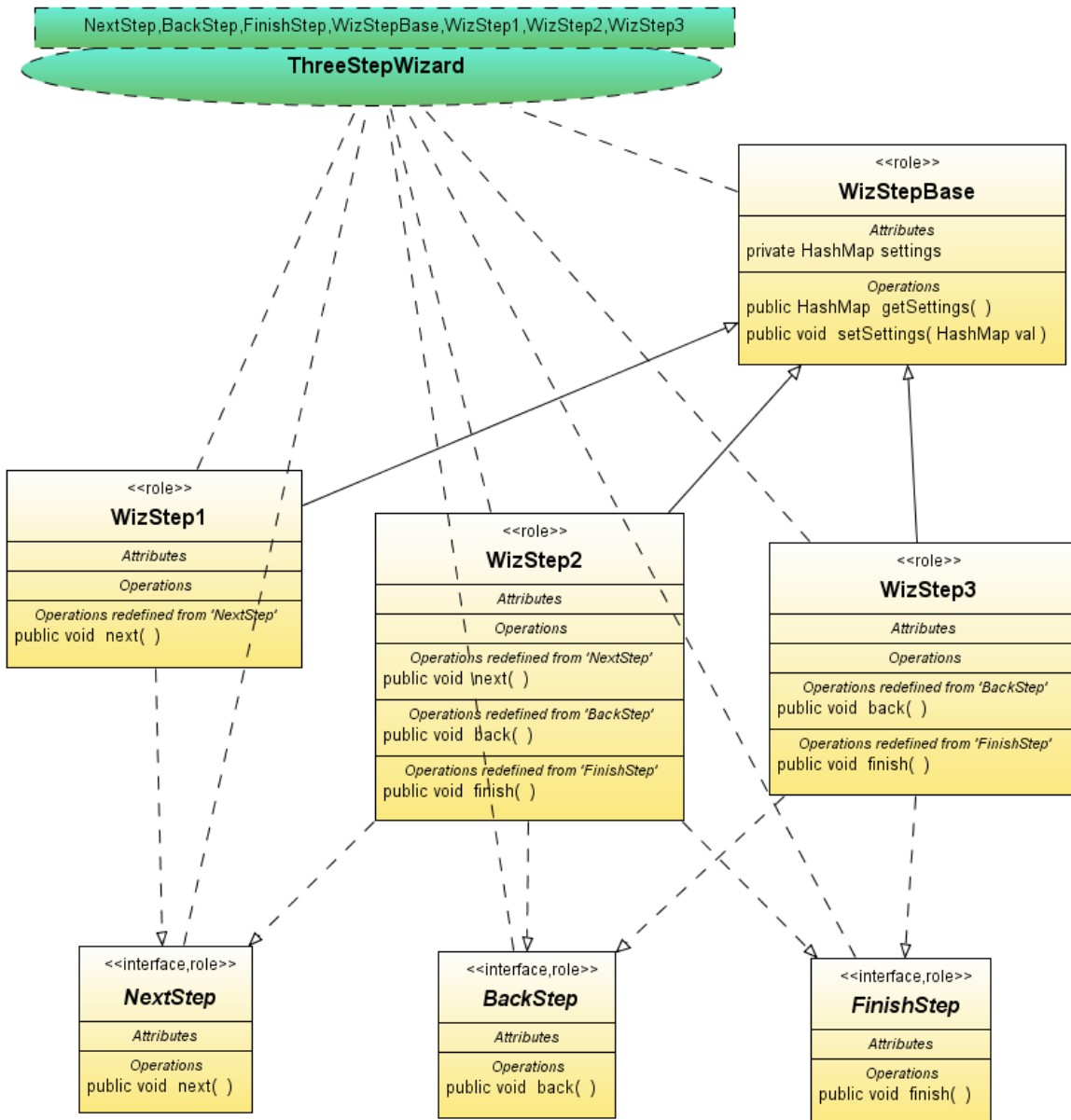
1. Create an empty Java application project (any name will do)
2. Create a UML project by Reverse Engineering the Java project you just created
Name it MyDesignPatterns or just use default project naming
3. Goto menu Window|UML Modeling|Design Center
4. In the UML Design Center window, expand the Design Center node and then expand the DesignPatternCatalog node
5. Right click the DesignPatternCatalog node, and select New|Project
6. Name the new design center project, My Design Patterns
7. You will be prompted to create a diagram: select Class Diagram and name it, Three Step Wizard Pattern

Note: this design pattern is very limited or even useless, but it demonstrates the power of the custom design patterns feature.

8. On the diagram, create one Interface Role element and three Class Role elements (in the Palette, scroll down to the Design Patterns category to see these element “role” types).
9. Rename the role elements as follows:
Interface Role 1: NextStep
Interface Role 2: BackStep
Interface Role 3: FinishStep
Class Role 1: WizStepBase
Class Role 2: WizStep1
Class Role 3: WizStep2
Class Role 4: WizStep3
10. Add an attribute to the WizStepBase class role element: Hashmap settings
11. Add the following operations to the following interface role elements:
NextStep: void next()
BackStep: void back()
FinishStep: void finish()
12. Create generalization links from the three WizStep class elements (1, 2 & 3) to WizStepBase.
13. Create implementation links as follows:
WizStep1 implements NextStep
WizStep2 implements NextStep, BackStep & FinishStep

WizStep3 implements BackStep & FinishStep

14. Create a Design Pattern element named, ThreeStepWizard
15. Bind each of the role elements to the Design Pattern element by using the Role Binding link
 - click the Role Binding link in the Palette, then click the first role element, then the design pattern element, and repeat for each of the rest of the role elements.
 - this will work best for the rest of the steps to follow if you bind them in some sort of logical order, like: NextStep, BackStep, FinishStep, WizStepBase, WizStep1, WizStep2, WizStep3
 - the reason is that when you apply the design pattern, it will prompt for the element names in this order and some sort of intuitive order is best
16. Your Design Pattern diagram should look something like this by now (see below):



Now we are ready to apply the design pattern in our UML Project

17. Right click the UML project node and select Apply Design Pattern
18. In the wizard, select the “My Design Patterns” project and the “ThreeStepWizard” design pattern
19. Click Next until you get to the “Choosing Participants” step (list of role elements)
20. Keep all the default names except the following:
 - WizStep1: NameAddressStep
 - WizStep2: PhoneNumbersStep
 - WizStep3: ConfirmStep
21. Click Next, check the “Create class diagram” checkbox, click Next, then click Finish
22. Elements will be generated in your UML project