

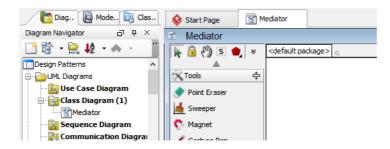
Mediator Pattern Tutorial

Written Date : October 21, 2009

This tutorial is aimed to guide the definition and application of <u>Gang of Four (GoF)</u> mediator <u>design</u> <u>pattern</u>. By reading this tutorial, you will know how to develop a model for the mediator pattern, and how to apply it in practice.

Modeling Design Pattern with Class Diagram

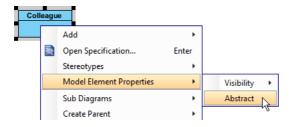
- 1. Create a new project *Design Patterns*.
- 2. Create a class diagram *Mediator*.



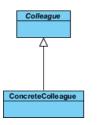
3. Select **Class** from diagram toolbar. Click on diagram to create a class. Name it as *Colleague*.



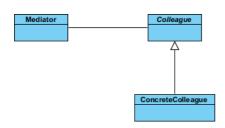
4. Right-click on *Colleague*, and select **Model Element Properties > Abstract** to set it as abstract.



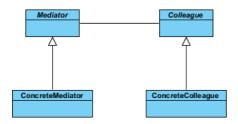
5. Move the mouse cursor over the *Colleague* class, and drag out **Generalization** > **Class** to create a subclass *ConcreteColleague*.



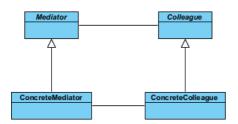
6. Move the mouse cursor over the *Colleague* class, and drag out **Association** > **Class** to create an associated class *Mediator*.



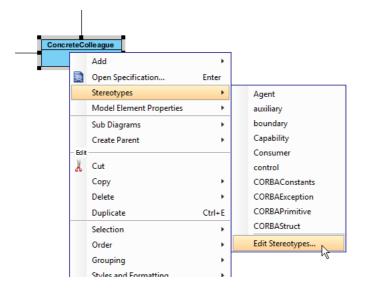
- 7. Right-click on *Colleague*, and select **Model Element Properties > Abstract** to set it as abstract.
- 8. Move the mouse cursor over the *Mediator* class, and drag out **Generalization** > **Class** to create a subclass *ConcreteMediator*.



9. Associate ConcreteMediator and ConcreteColleague.



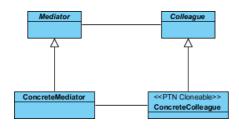
In practice, there may be multiple *ConcreteColleaguie* classes. To represent this, stereotype the *ConcreteColleague* class as **PTN Cloneable**. Right-click on *ConcreteColleague* class and select **Stereotypes > Stereotypes...** from the popup menu.



11. In the **Stereotypes** tab of class specification, select **PTN Cloneable** and click > to assign it to the class. Click **OK** to confirm.

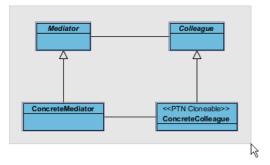
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The diagram should become:

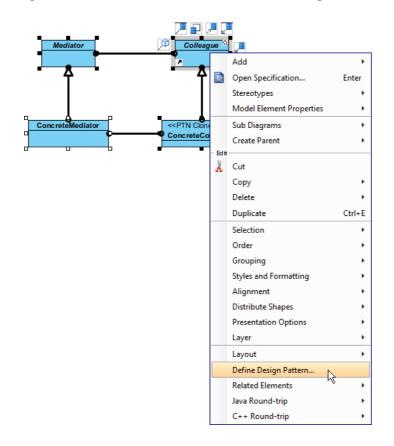


Defining Pattern

1. Select all classes on the class diagram.



2. Right-click on the selection and select **Define Design Pattern...** from the popup menu.



3. In the **Define Design Pattern** dialog box, specify the pattern name *Mediator*. Keep the file name as is. Click **OK** to proceed.

\$	Define Design Pattern						
Name:	Mediator						
File name:	Mediator.pat						
Location	Location						
Save	Save to workspace:						
Save	to directory:						
Directory	Directory: C:\Users\John\Applications\Visual Paradigm 11.1\bin\vpworkspace\vp_design_pattern_repo v						
Destination: C:\Users\John\Applications\Visual Paradigm 11.1\bin\vpworkspace\vp_design_pattern_repo\Mediator.pat							
	OK Cancel						

Applying Design Pattern on Class Diagram

In this section, we will try to make use of the mediator pattern to model a part of a file explorer.

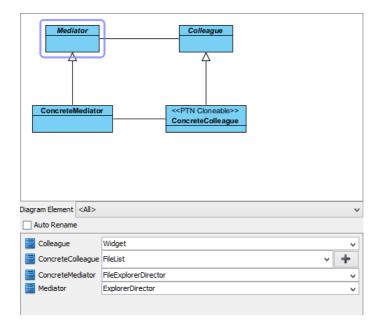
- 1. Create a new project *File Explorer*.
- 2. Create a class diagram Domain Model.
- 3. Right-click on the class diagram and select **Utilities** > **Apply Design Pattern...** from the popup menu.

	Open Specification			
	Add Shape	•		
	Rename			
	Show Quality Checker Panel			
	Synchronize to Entity Relationship Diagram			
	Ignore Classes when Synchronizing			
î	Paste View		ĺ	
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\$	Design Pattern	×
Patterns: Mediator	Mediator Colleague Auto Rename ConcreteMediator	*
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4. In the **Design Pattern** dialog box, select *Mediator* from the list of patterns.

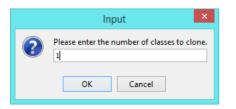
5. A the bottom of pane, rename Colleague, ConcreteColleague, ConcreteMediator, Mediator to Widget, FileList, FileExplorerDirector, ExplorerDirector.



6. We need one more concrete colleague - *FolderList*. Click on the + button next to *ConcreteColleauge* and select **Clone...** from popup menu.

2	Widget	¥		
Colleague	FileList 🗸	+		
Mediator	FileExplorerDirector	C	lone	
	ExplorerDirector	Y		Ş

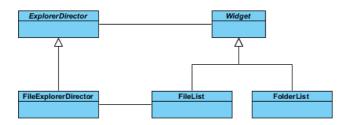
7. Enter 1 as the number of classes to clone.



8. Rename ConcreteColleague2 to FolderList.

📒 Colleague	Widget	*
ConcreteColleague	FileList	~ +
ConcreteColleague2	FolderList	~
ConcreteMediator	FileExplorerDirector	~
Mediator	ExplorerDirector	~

- 9. Click **OK** to confirm editing and apply the pattern to diagram.
- 10. Tidy up the diagram. It should become:



Resources

- 1. <u>Design Patterns.vpp</u>
- 2. <u>Mediator.pat</u>

Related Links

• Full set of UML tools and UML diagrams



Visual Paradigm home page (https://www.visual-paradigm.com/)

Visual Paradigm tutorials (https://www.visual-paradigm.com/tutorials/)