

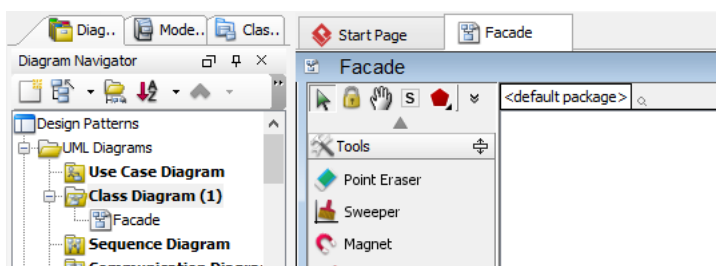


## Facade Pattern Tutorial

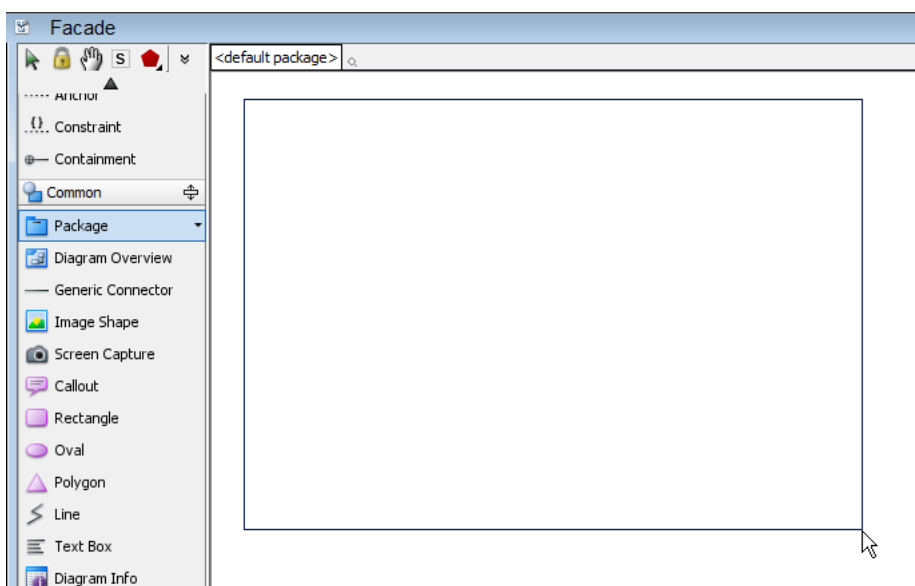
Written Date : October 14, 2009

### Modeling a Design Pattern with a Class Diagram

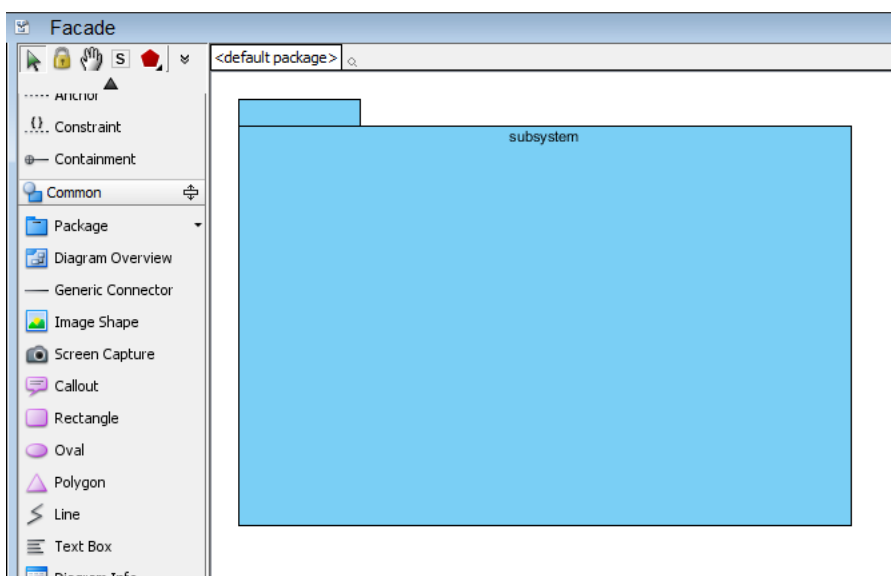
1. Create a new project named *Design Patterns*.
2. Create a class diagram named *Facade*.



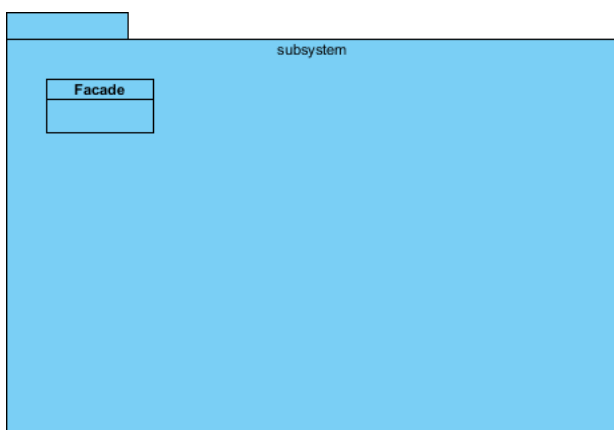
3. Select **Package** from the diagram toolbar. Press on the diagram and drag it towards the bottom right to form a package representing a subsystem.



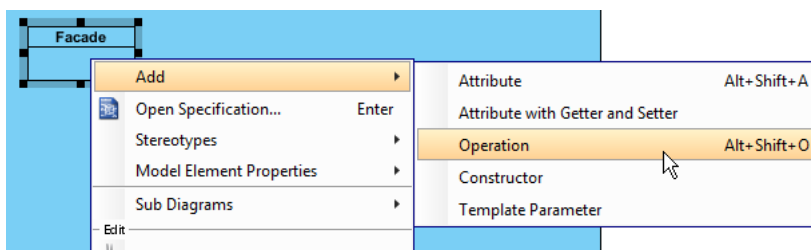
4. Name the package *subsystem*.



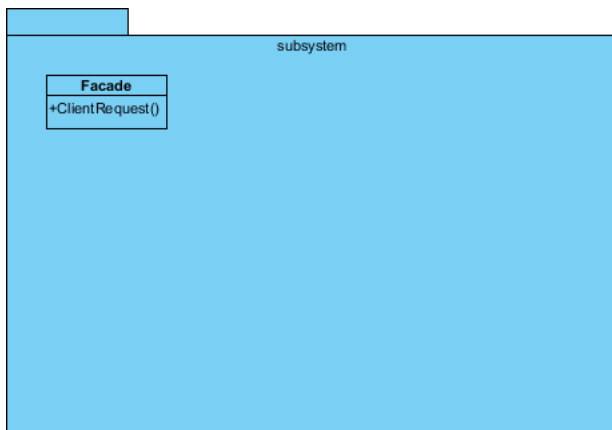
5. Select **Class** from the diagram toolbar. Click inside the subsystem to create a class. Name it *Facade*.



6. Right-click on *Facade* and select **Add > Operation** from the popup menu.

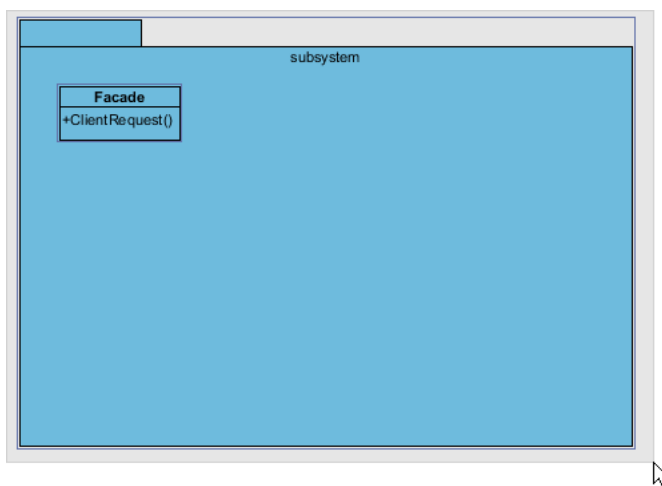


7. Name the operation *ClientRequest*. Note that it must be a public operation that enables classes external to the subsystem to access it.

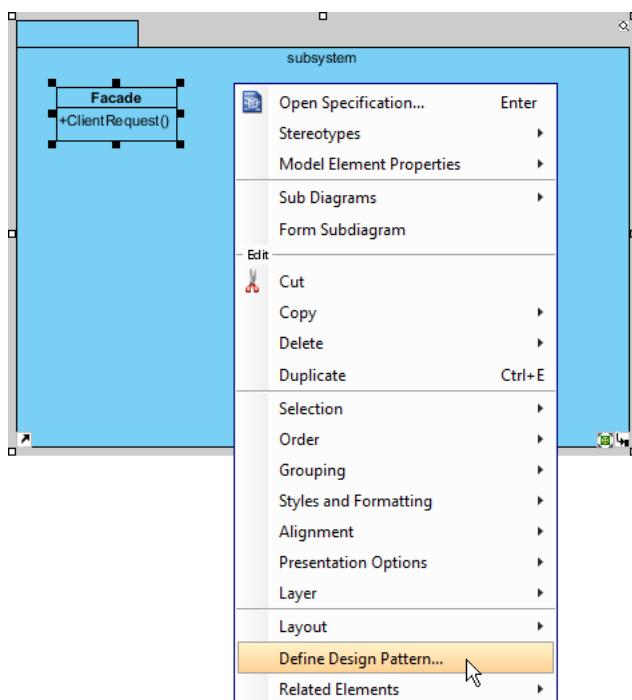


## Defining a Pattern

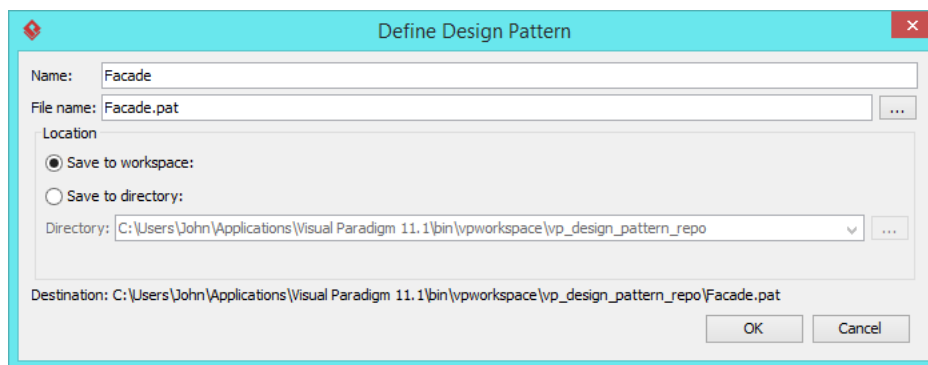
1. Select everything on the class diagram.



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



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

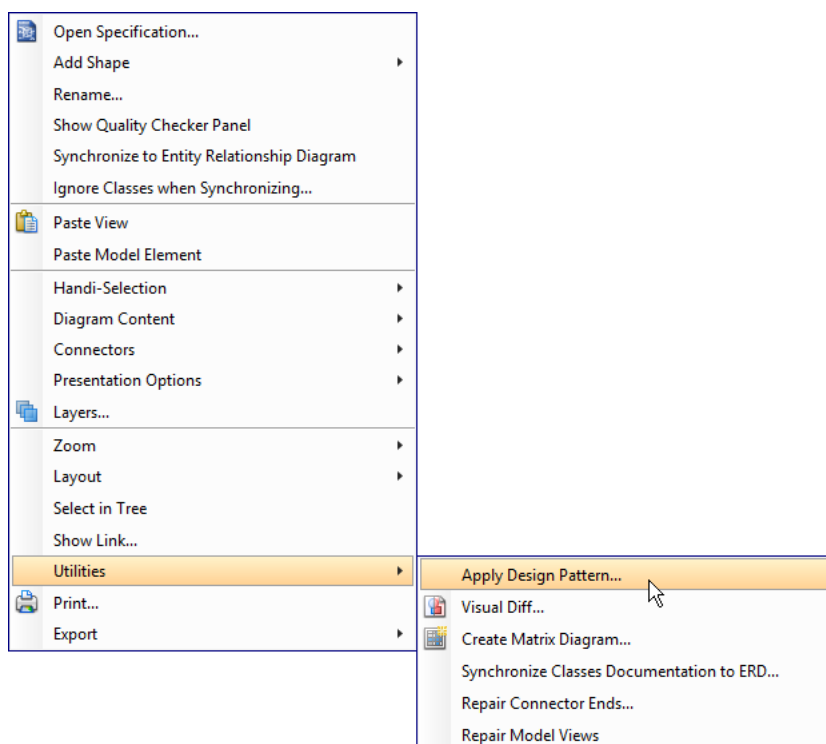


## Applying a Design Pattern to a Class Diagram

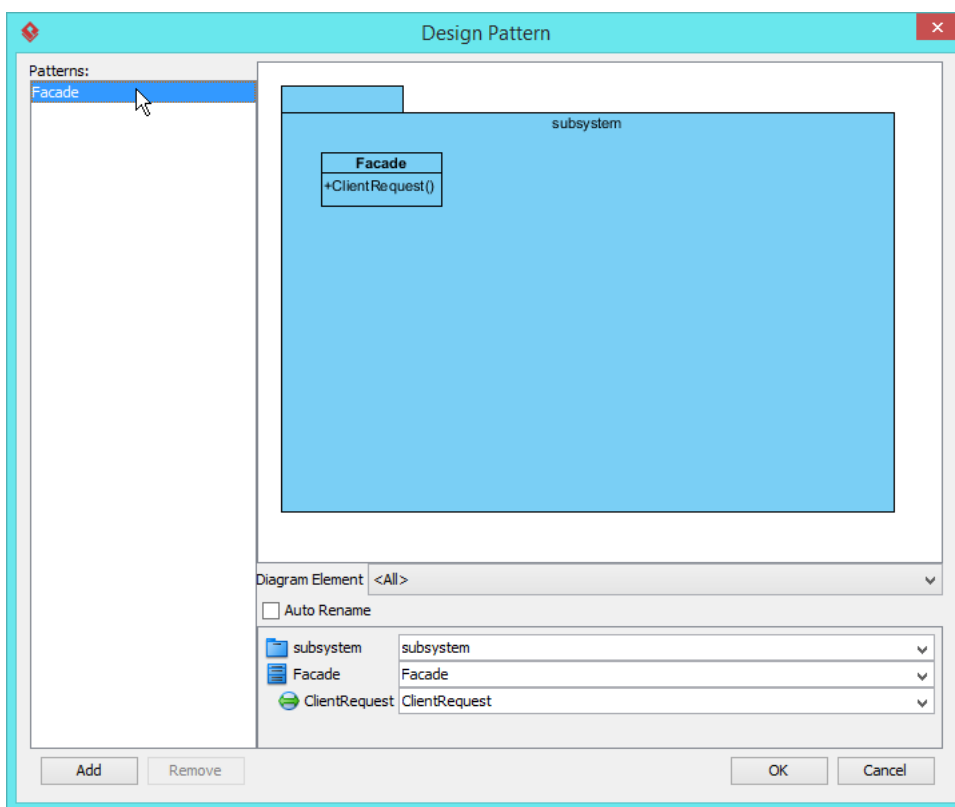
In this section, we will apply the facade pattern in modeling a code generator.

1. Create a new project named *Code Generator*.
2. Create a class diagram named *Generator*.

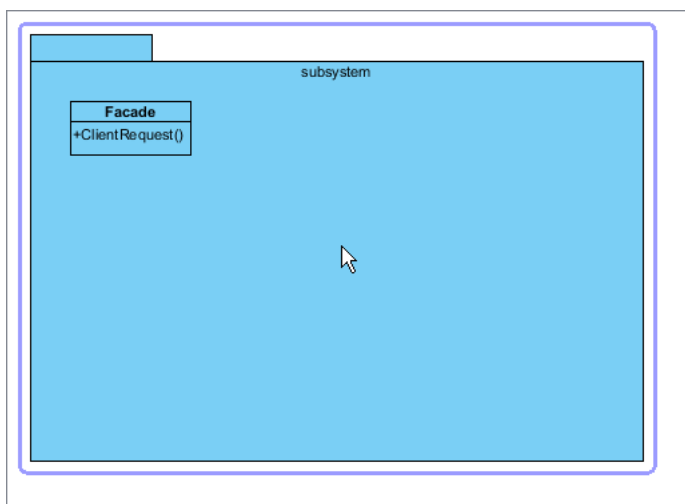
3. Right-click on the class diagram and select **Utilities > Apply Design Pattern...** from the popup menu.



4. In the **Design Pattern** dialog box, select *Facade* from the list of patterns.



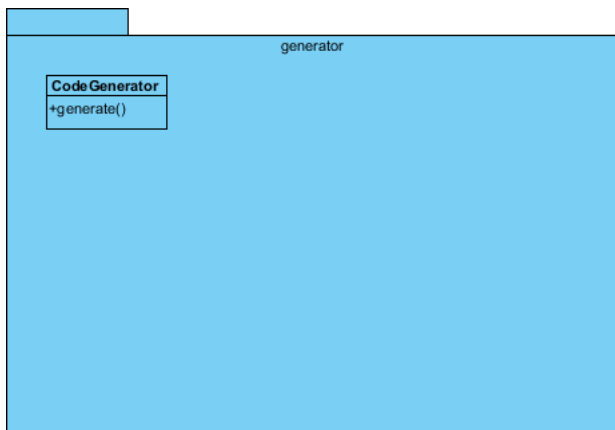
5. Select *subsystem* in the overview pane.



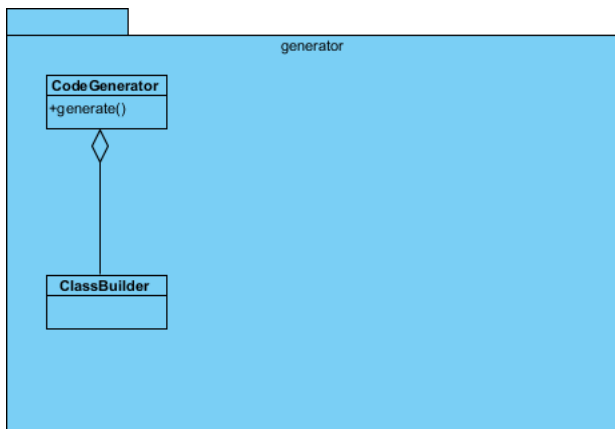
- At the bottom pane, rename *subsystem* to *generator*. Rename *Facade* to *CodeGenerator* and *ClientRequest* to *generate*.



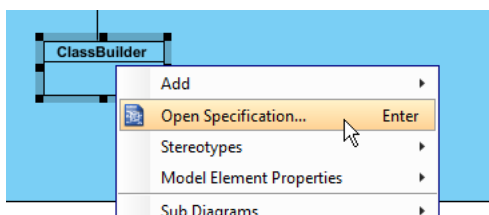
- Click **OK** to apply the pattern. This is the diagram obtained:



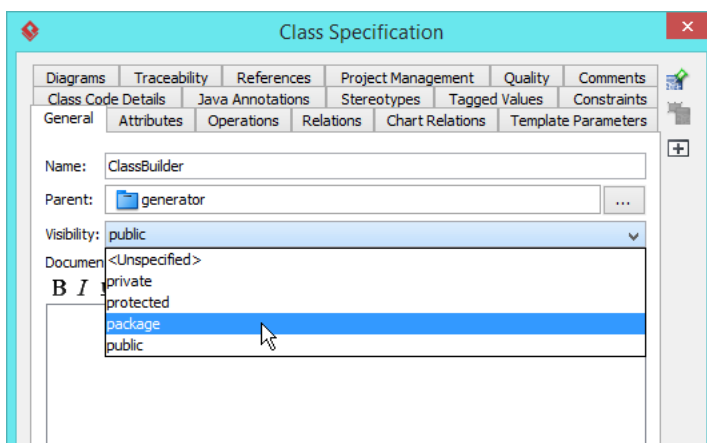
- We need to fill in the subsystem. Move the mouse cursor over the *CodeGenerator* class and drag out **Aggregation > Class** to an empty region in the package to create a class. Name the class *ClassBuilder*.



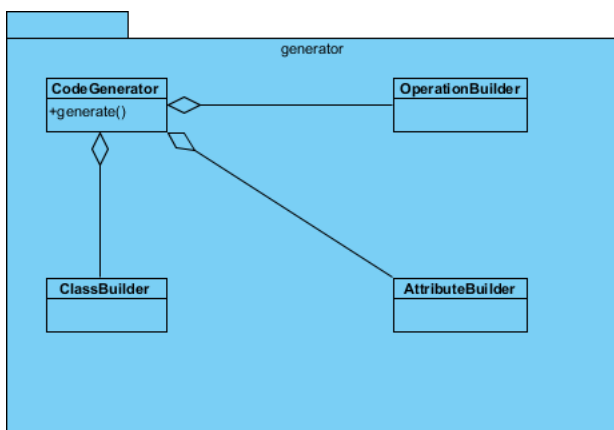
9. Right-click on *ClassBuilder* and select **Open Specification** from the popup menu.



10. In the **Class Specification**, set **Visibility** to **package**. Click **OK** to confirm.



11. Repeat steps 8 to 10 to create classes *AttributeBuilder* and *OperationBuilder*.



#### Resources

1. [Design Patterns.vpp](#)
2. [Facade.pat](#)

Related Links

- [Full set of UML tools and UML diagrams](#)



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