Software Design: Assignment 4 & 5

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1 UML

See `ClassDiagram.pdf` for the UML.

2 Overview

We have used the Observer/Observable, Decorator, Singleton, Chain of Responsibility patterns in this assignment. We have also used the Repository Architecture (Blackboard) and the MVC architecture. Details of all are described below.

2.1 `ClassData`

`ClassData` contains all the information about the current UML state. It is a singleton, an observable, and also the Repository Architecture (Blackboard).

2.2 `UmlDesigner`, `UmlDescriptor`

`UmlDesigner` corresponds to the GUI of the UML and `UmlDescriptor` corresponds to the "code" of the current UML state. They are both observers that observe `ClassData` and are part of the Model in the MVC.

2.3 `InitializeFrame`

This class handles the creation of the individual components of the window. It is a part of the View in the MVC.

2.4 `ButtonActions`

This class handles the event inputs and is the Controller of the MVC.

2.5 `StatusLogger`

`StatusLogger` is a singleton that logs the status of the application.

2.6 `DrawLine`, `DrawAssociation`, `DrawComposition`, `DrawInheritance`

`DrawLine` is the class that handles drawing the base lines of the connections. The other classes decorate `DrawLine` with the corresponding features.

2.7 `AssociationHandler`, `CompositionHandler`, `InheritanceHandler`

These classes handle which type of connection to draw. They implement the Chain of Responsibility pattern.