CP-317-B - Software Engineering

Quiz Submissions - Test 2- Requires Respondus LockDown Browser

Abdullahi Abdullahi (username: aabdullahi1)

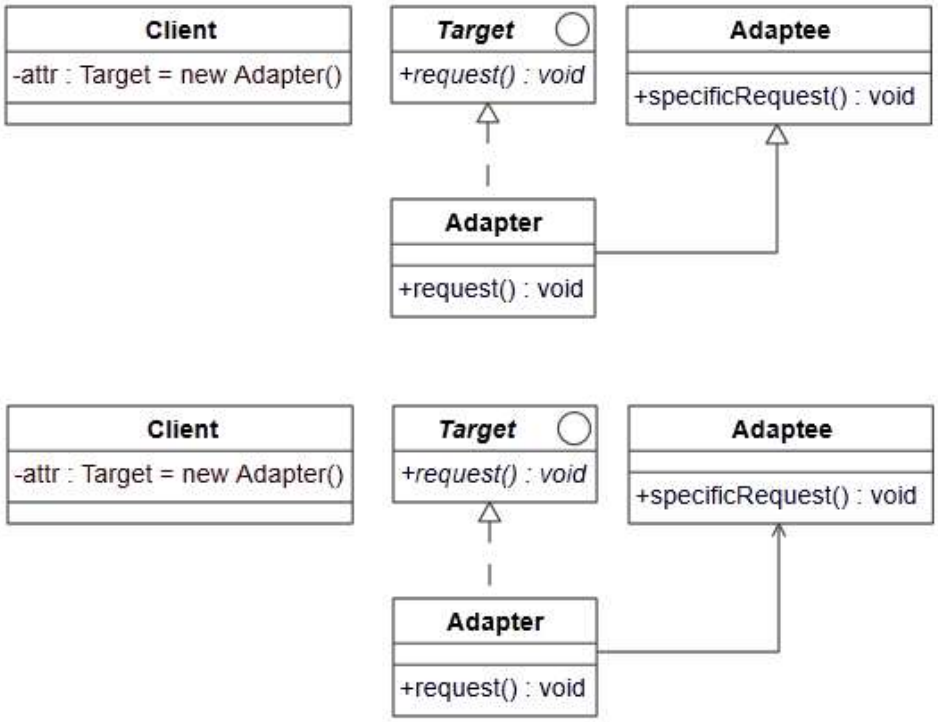
Attempt 1

Written: Jul 24, 2018 1:00 PM - Jul 24, 2018 1:33 PM

Submission View

Your quiz has been submitted successfully.

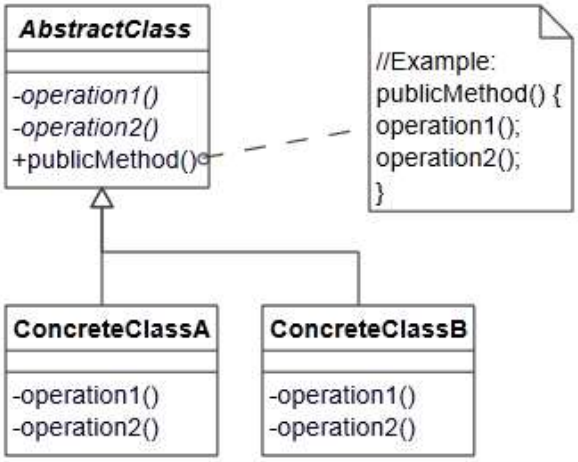
Question 1 **4 / 4 points**



Given the previous two UML diagrams, name the patterns they represent and describe how they differ.

Adapter pattern. The difference between the two uml Diagrams is that one inherits from a base class whereas the other uses references the class

Question 2 **2 / 3 points**



Given the previous UML diagram, name the pattern it represents and briefly describe how it works.

This pattern is represented by the template pattern. Both concrete classes inherit from the AbstractClass and override the inherited methods

Question 3 **0 / 3 points**

Given the following simple software design problem, name the design pattern you would use to solve it and briefly describe why you chose that pattern.

A piece of mathematical data needs to be displayed in both Cartesian and polar graphical form:

Here we would use a template pattern to display the data in Cartesian and polar form. The reason being we can have cartesian and polar classes which are subclasses of an abstract class where calculation methods are overridden

Question 4 **0 / 3 points**

Given the following simple software design problem, name the design pattern you would use to solve it and briefly describe why you chose that pattern.

A program can save a data object as either a text file or as a binary file depending on the object type.

Here we would want to use a composite pattern in order to get the two classes (eg. textfile and binaryfile) to behave in the same manner.

Question 5 **0 / 3 points**

Given the following simple software design problem, name the design pattern you would use to solve it and briefly describe why you chose that pattern.

A company wants to offer a prize to its millionth customer, whether that customer shops in one of its stores, on-line, over the phone, or by mail-order.

Here we would use a composite pattern in order to get the different objects (phone order, on-line order, in-store order and mail order) to behave in the same manner and thus be able to keep a running total of all the orders and award the prize accordingly

Question 6 **0 / 3 points**

Given the following simple software design problem, name the design pattern you would use to solve it and briefly describe why you chose that pattern.

A program can execute an assembly language program from either a binary file or an S-record file.

I would use a Singleton design pattern because only one program can be executed rather than both

Question 7 **3 / 3 points**

Given the following simple software design problems, name the design pattern you would use to solve it and briefly describe why you chose that pattern.

A program offers users multiple ways of viewing the HTML files in an SVN repository: as HTML, HTML source, or XML.

Here I would use a template pattern seeing as all the files would extend a base class of html file and would only be viewed differently which would allowed for by overriding methods

Question 8 **3 / 3 points**

Given the following simple software design problems, name the design pattern you would use to solve it and briefly describe why you chose that pattern.

A war game needs to keep track of army units that are made up of other units as well as individual officers.

here I would use composite pattern because the units being comprised of other units is comprised of individual officers that we want behaving in the same manner

Question 9 **2 / 2 points**

In the *Open/Closed Principle* for Design Patterns, components should be open for ___Extension___ and closed for ___Modification___ .

Question 10 **5 / 5 points**

Briefly list the five main things that make a Design Pattern a Design Pattern.

Answer for blank # 1: Have a name

Answer for blank # 2: Teach something

Answer for blank # 3: Have a context

Answer for blank # 4: Be reusable

Answer for blank # 5: it should reoccur

Question 11 **3 / 3 points**

Given the following simple maintenance problem, name the type of maintenance it represents and briefly describe why you chose that type.

Replace the linear graph that is displayed for a certain type of data with a logarithmic chart that the menu claims should be displayed.

Here corrective maintenance is represented because the wrong piece of data was displayed and is being corrected to show what the menu said should be showed.

Question 12 **3 / 3 points**

Given the following simple maintenance problem, name the type of maintenance it represents and briefly describe why you chose that type.

Replace all students final grades based upon a 12 point scale with a new 4 point scale standard.

Adaptive maintenance is applied here because although the grade is still the same, the way it is represented is being changed (from 12 point to 4 point)

Question 13 **3 / 3 points**

Given the following simple maintenance problem, name the type of maintenance it represents and briefly describe why you chose that type.

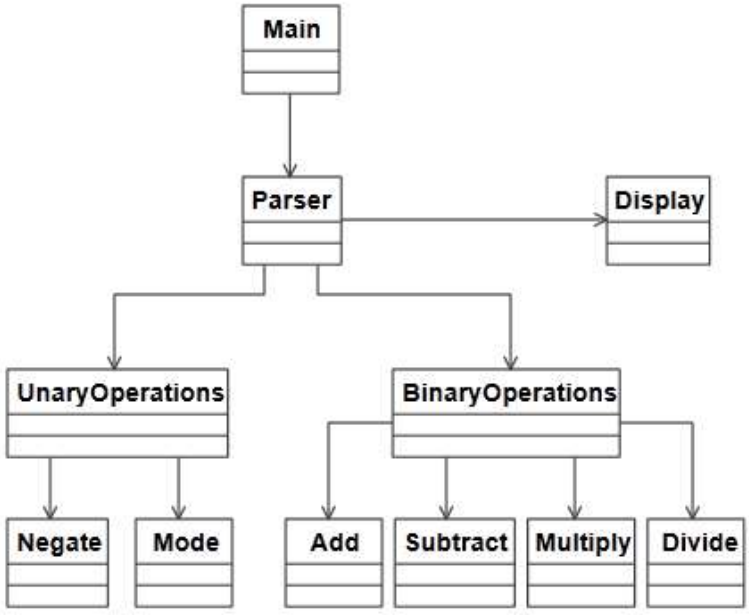
Add the ability to access report data from a remote site using a URL.

Perfective maintenance is represented here because we are adding on functionality to the site that should already be there. It not being there is inherently detrimental to the program

Question 14 **2 / 2 points**

When testing a *logic artifact*, the classes it references are replaced by ___Stubs___ ; when testing an *operation artifact*, the classes that refer to it are replaced by ___Drivers___ .

Question 15 **2 / 2 points**



This UML diagram represents the structure of a simple calculator program. Identify each class as either a *logic artifact* or an *operation artifact*.

__2__ Negate

__1__ Parser

__2__ Multiply

__1__ UnaryOperation

__2__ Display

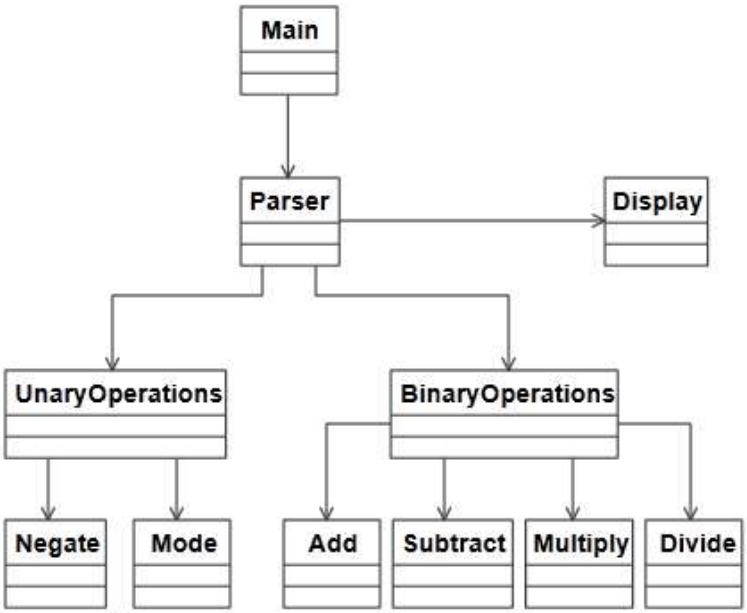
__1__ BinaryOperation

__2__ Add

__2__ Subtract

1. Logic Artifact
2. Operation Artifact

Question 16 **4 / 4 points**



This UML diagram represents the structure of a simple calculator program. Give the ordering for a sandwich integration of these classes. Show the ordering by simply listing the classes in the order in which you would test and integrate them in either *bottom up* or *top down* mode. (Put top down classes in the top box, and bottom up classes in the bottom box.) A class that appears in both modes implies that it is part of the final step of integration.

Answer for blank # 1: Main, Parser, BinaryOperations, UnaryOperations

Answer for blank # 2: Negate, Mode, Add, Subtract, Multiply, Divide, Display, BinaryOperations, UnaryOperations, Parser

Question 17 **2 / 2 points**

Briefly describe *unit testing*.

Unit testing is described as the testing of all artifacts of a program. Every single method is tested in order to keep track of what works and what doesn't. Unit testing is done manually and done in parallel with all the workflows.

Attempt Score: 38 / 51

Overall Grade (highest attempt): 38 / 51

Done