CSE 231 Problem Set 03

# Problem 31.1: Level of Adaptability

Consider the following class diagram. The base class has no member variables and two pure virtual functions. The derived classes honor the base class’ interface but provide all their own functionality. The convert() method allows one currency type to convert to another.



Characterize the level of adaptability based on the following scenario. Provide a convincing rationale as to why it is what you say it is.

Augment the Money class to include an English pound.

# Problem 31.2: Level of Adaptability

Consider the following class diagram. The initialize() function sets the sign (used in the display() method) and conversion value (used in the convert() method) in the base class.



Characterize the level of adaptability based on the following scenario:

Augment the Money class to include an English pound, which behaves much like the American dollar and the Euro.

# Problem 31.3: Level of Adaptability

Consider the following class diagram:



Characterize the level of adaptability based on the following scenario:

Create a class to represent an English pound

# Problem 31.4: Design a Class

Create a class diagram matching the following scenario:

A personal finance application can display several types of reports: a budget report, a histogram showing account balances over time, and a cash flow graph depicting income vs outgo.

Characterize the level of adaptability for this or for your class diagram.

After your initial characterization of adaptability, make the following change:

Create a new report type: a pie chart. This will display the percentage of spending associated with each budget category.

Describe in English what you would need to do to accommodate this change:

After making this change, characterize again the level of adaptability. Was your predicted and realized levels of adaptability comparable?

# Problem 31.5: Design a Class

Create a class diagram matching the following scenario:

A personal finance system can have three types of users: an administrator who has complete access to the entire system, an auditor who has read-only access to the entire system, and a standard user who can only read/write those accounts specifically assigned to her.

Characterize the level of adaptability for this or for your class diagram.

After your initial characterization of adaptability, make the following change:

Add a new type of user: restricted. This user can have read-only access to only her specifically assigned accounts and no other.

Describe in English what you would need to do to accommodate this change:

After making this change, characterize again the level of adaptability. Was your predicted and realized levels of adaptability comparable?