

## UML-2 Object Modeling Practice

February 12, 2014 This scenario describes Pat's checkbook problem for which we will model a "checkbook assistant" with activity dates!

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## Pat's Checkbook Narrative

An everyday citizen, Pat, tries to keep track of his/her financial accounts with check register and written notes, but feels that a "personal financial assistant" would be very useful.

Pat maintains a checking and savings account. Pat writes checks and records them in the check register. Pat transfers money back and forth between the checking and savings accounts.

At the end of the month when the bank statement arrives Pat tries to double check it by cross checking the bank statement with the checkbook's check register.

Pat tries to keep track of expenses by summarizing those expenses at the end of the month into groups for things like food, rent, car payments, entertainment, etc.

At the end of the year Pat's tax return usually requires itemized deductions and the checkbook is the primary source for that information.

## Object Modeling Pat's Checkbook

Phase 1: Given the narrative above you should be able to identify primary issues in Pat's checkbook process that would be modeled effectively with classes in a class diagram. The narrative is purposefully limited in detail. You're an experienced professional! Use your "domain knowledge" to consider what functions Pat's checkbook assistant will have to support. You may wish to begin your analysis of Pat's problem by drafting some Use Cases for the various activities that Pat wishes to use the checkbook to assist him/her.

Once you've identified all the core classes that explain the business rules in this problem your team will draft a useful class diagram with the appropriate attributes and services that Pat needs to keep his/her checkbook under control.

For Phase 1 complete a UML-2 class diagram with descriptions of each class, attribute, service and relationship in hardcopy. Due Wednesday, February 26, 2014

Diagrams should be "computer drawn" (Visio™, SmartDraw™, etc.) Descriptions should be word processed.

Phase 2: Finally, once you think you've got the classes and their relationships and responsibilities down "pat," it's time to model the sequence of class & object interactions that occur to satisfy any of the Use Cases that you modeled for Pat's checkbook problem. In the end you should handle three important functions of Pat's checkbook: issuing a payment, reconciling the checkbook with the bank's accounts, and preparations for submitting an IRS 1040 tax return using the information collected and organized in Pat's checkbook assistant.

For Phase 2 complete a revised UML-2 class diagram with descriptions of each class, attribute, service and relationship.

Submit UML-2 use cases and sequence diagrams for two scenarios: A; "Pat issues a payment for an expense" and B: "Pat reconciles his/her checkbook with the bank's records."

<u>"Extra Credit!": Include UML-2 use case and</u> sequence diagram for "Pat prepares his/her annual IRS 1040 tax return." Due Wednesday, March 5, 2014

This is how object modeling is done in an iterative, circular and elaborative process.

Don't be afraid to sketch ideas and then change them as you discuss the model's "usefulness" with your learning team mates. It's much easier to refine a weak model than draft a very good one from scratch. Refine, refine, refine!!!!