Computer Science Department
San Francisco State University
CSC 340
Spring 2016

Assignment 3 - Classes and Operator Overloading

Due Date
Wednesday, March 9, at midnight.

Overview
The purpose of this project is to transition our simple domain in our budget application:
Budget, **Account**, and **Envelope**, to classes.

Submission
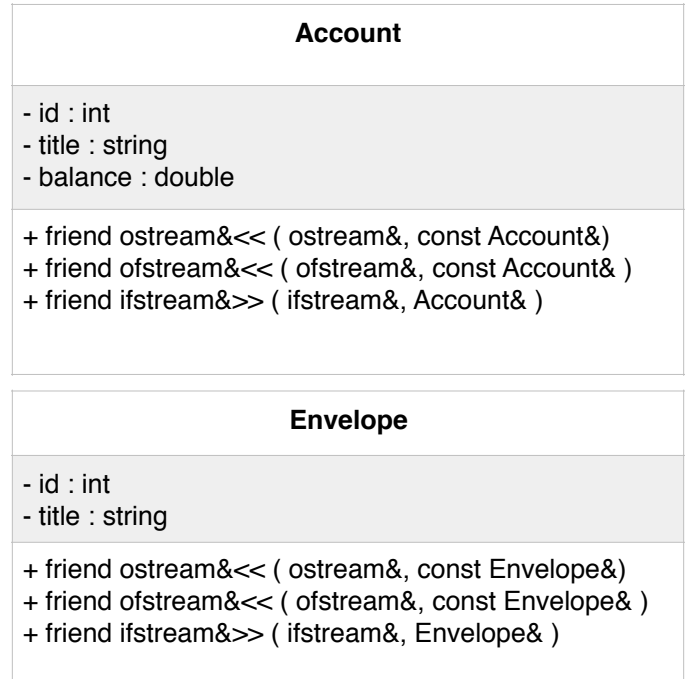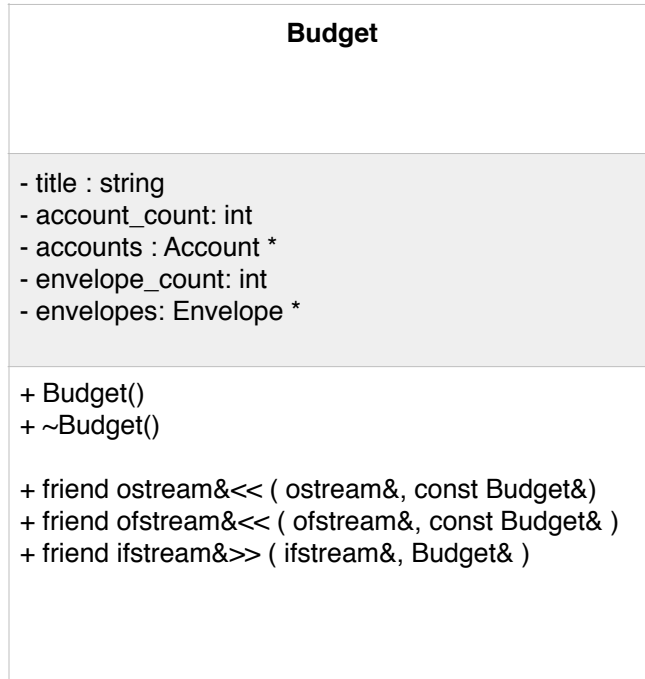See the submission guidelines posted on iLearn.

Requirements
1. Move all of the structs that were declared in Assignment 2 into classes in separate compilation units.
2. Add the overloaded operators discussed in class, and added to the UML, to each of the classes.
3. Update the main method, and any processing methods, to make use of the new overloaded operators. Note that there is no change in output!

Resources
The makefile for this assignment can be found at https://gist.github.com/jrob8577/9fc000a5339b2b0be449.

Appendix A: UML Diagrams

Budget
- title : string - account_count: int - accounts : Account * - envelope_count: int - envelopes: Envelope *
+ Budget() + ~Budget() + friend ostream&<< (ostream&, const Budget&) + friend ofstream&<< (ofstream&, const Budget&) + friend ifstream&>> (ifstream&, Budget&)

Account
- id : int - title : string - balance : double
+ friend ostream&<< (ostream&, const Account&) + friend ofstream&<< (ofstream&, const Account&) + friend ifstream&>> (ifstream&, Account&)

Envelope
- id : int - title : string
+ friend ostream&<< (ostream&, const Envelope&) + friend ofstream&<< (ofstream&, const Envelope&) + friend ifstream&>> (ifstream&, Envelope&)

Appendix B: Budget File Format

File Format	Sample Data

TITLE
ENVELOPE_COUNT
ENVELOPE_ID ENVELOPE_TITLE
// Repeated up to ENVELOPE_COUNT
ACCOUNT_COUNT
ACCOUNT_ID ACCOUNT_TITLE
ACCOUNT_BALANCE
// Repeated up to ACCOUNT_COUNT
	My Budget
	2
	1 Rent
	2 Groceries
	2
	345 Checking 10.00
	876 Savings 100.00

Note the output format of the decimals (precision is 2, decimal point shown).

Sample Output
User input is ***italicized, in bold***.

➜   ***make***
```
g++ –c main.cpp
g++ main.o –o driver
```
➜   ***cat BUDGET***
```
NoSpacesInTitleBudget
2
123 WoW
```

```
456 Groceries
2
789 Checking 100.00
120 Savings 55.55
➜ ./driver
1. Show Budget
0. EXIT
Enter your selection: 1
----- NoSpacesInTitleBudget -----
2 Accounts:
789: Checking - 100.00
120: Savings - 55.55

2 Envelopes:
123: WoW
456: Groceries

1. Show Budget
0. EXIT
Enter your selection: 0
➜  cat BUDGET
NoSpacesInTitleBudget
2
123 WoW
456 Groceries
2
789 Checking 100.00
120 Savings 55.55
➜
```