Computer Science Department San Francisco State University CSC 340 Spring 2016

Assignment 7- All the Things

Due Date

Wednesday, May 4, at midnight.

Overview

The purpose of this project is to leverage the template **Tree** class we created to allow our budget application to record many months of budget.

Submission

See the submission guidelines posted on iLearn.

Requirements

- 1. Implement the **EnvelopeBox** class that will use the template **Tree** to store a month of **BudgetEnvelopeS**.
 - 1.1. See the UML for required members and methods
 - 1.2. Extra Credit: Carry a previous month's amounts over to a new month when the new month's EnvelopeBox is created (see the EC constructor).
- 2. Updated the **BudgetEnvelope** class to include the overloaded operators needed to save and display:
 - 2.1. Overloaded **ofstream** << **operator** (save to file)
 The format to be written to the file is:
 ENVELOPE ID ENVELOPE NAME AMOUNT
 - 2.2. Overloaded **ifstream** >> **operator** (read from file)
 - 2.3. Overloaded **ostream << operator** (output to stdout) The output should be: [ENVELOPE_ID] ENVELOPE_NAME: AMOUNT
- 3. Write a test driver

Resources

The makefile for this assignment can be found at https://gist.github.com/ jrob8577/2aa923ae477ef63debdc3cc53c4fb027 (the same as for assignment 5 - template classes are only included via header include, and you may use main.cpp to write your driver).

Appendix A: UML Diagrams

BudgetEnvelope : BudgetItem

- id: int
- name: string
- + withdraw(double) : bool
- + friend bool operator == (const BudgetEnvelope&)
- + friend bool operator < (const BudgetEnvelope&)
- +friend ofstream& operator << (ofstream&, const BudgetEnvelope&)
- +friend ifstream& operator >> (ifstream&, BudgetEnvelope&)
- + friend ostream& operator << (ostream&, const BudgetEnvelope&)

EnvelopeBox

- month: int
- year: int
- envelopes: Tree<BudgetEnvelope>
- +EnvelopeBox(const Envelope*, int month, int year)
- +EXTRA CREDIT EnvelopeBox(const EnvelopeBox*, int month, int year)
- +void deposit (int id, double amount)
- +bool withdraw (int id, double amount)