Object Oriented Programming I Project Report

151220152056 – Abdullah Tarık Yılmaz

Budget Track Project Report

In this project, a Budget Track operation is done. The project is implemented by using Dev-C++ in C++ programming language. In order to exploit object-oriented programming principles two classes and two structs are designed for Budget Category File and Transaction File. The program includes two .txt file. The "budget.txt" file has some informations about category number, current category balance and category name. The "transactions.txt" file has some informations about transaction budget category number, transaction date – yyyy/mm/dd, transaction amount and transaction description. Informations were read until whitespace and next line separately. Category names and transaction description were read until next line because they might have included more than one word. To read all informations, "<fstream>" library used. Reading operation was done until program found "NULL" line in .txt file. If there are more than 50 budget or more than 500 transaction category, program saves just first 50 budget and 500 transaction category. BudgetCategory and TransactionCategory structs were seperated form classes to use scope resolution operator which is an important feature for C++. Informations were saved in arrays of struct and copied into multimap and multiset containers. Each array are limited with a number for category datas. Containers were used to order datas easly with "less<int>" and bool operator. For each .txt file, the category numbers and for "transactions.txt" file transaction date ordered as ascended in containers. Category numbers for each containers are checked for equality with iterators. If category numbers are equal, addition was done for new balance amount. Final balance amount and its category were printed to the screen. Multimap container's category number jumped to the next order and program is checked for another equality. The program repeats the same steps for the next category number. This loop has done until program reachs the end of the category numbers. Output of Budget Track is given in the following figure.

```
 School Supplies
Category:       101  Balance:   200.00
        2007/08/27    -2.79     197.21 Stapler
Category:       101  Balance:   197.21


 Books
Category:       102  Balance:   -50.00
        2007/08/23   -82.00    -132.00 Absolute C++
        2007/08/24   500.00     368.00 Textbook Stipend
        2007/08/25   -55.00     313.00 Introduction to Linux
        2007/08/26    -8.00     305.00 CS215 Lab Manual
Category:       102  Balance:   305.00


 Automotive Needs
Category:       201  Balance:   300.00
Category:       201  Balance:   300.00


 Gas
Category:       202  Balance:   200.00
        2007/08/28   -40.00     160.00 Gas
Category:       202  Balance:   160.00


 Rent
Category:       301  Balance:  1000.00
        2007/08/21 -1000.00       0.00 Rent
Category:       301  Balance:     0.00


 Apartment Supplies
Category:       302  Balance:   500.00
        2007/08/22  -123.45     376.55 Target Purchase
        2007/08/24   -85.71     290.84 Blender
Category:       302  Balance:   290.84


 Food
Category:       401  Balance:   300.00
        2007/08/24    -3.79     296.21 Taco Bell
        2007/08/26   -10.00     286.21 Lunch at Black Cat
Category:       401  Balance:   286.21


 Clothing
Category:       501  Balance:   300.00
        2007/08/25   -30.00     270.00 T-Shirts
        2007/08/27  -300.00     -30.00 Jeans
Category:       501  Balance:   -30.00
```

Figure 1: Output of Program