Project in C++ OOP

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1 Preamble

Assignment was to create a Bank which operated the way the lab described.

2 The Code

2.1 placement

I've decided to keep all files associated with the lab in the root of the project folder. There are in all 12 files 2 for each class and 2 for often used functions.

2.2 namespace

I chose to remove

```cpp
using namespace std;
```

from all files it was previously used in. I find that this improves readability and clearly seperates std functions from self-made ones.

2.3 code

I chose to implement the class as it was put up to in the Lab. But not exactly. To ease the readability (and managebility) of the read/load from file stuff. I overloaded the *std::ostream* and *std::istream* with operators << and >> so that i could use following syntax:

```cpp
Account account;
while (is >> account)
{
   //push account to accounts vector
}
```

By the way I just accidentally discovered the ternary operator and found out that I love it! :D For some reason I had never seen it used anywhere at all and didn't know what it was. I might have over used it (really don't know) but I like tha conciseness of code it gives. f.x.

```
const bool Account::withdraw(const double amount)
{
  return amount>getUsableBalance() ? false : (balance-=amount);
   /*
   if (amount > getUsableBalance())
   {
      return false;
   }
   else
   {
      balance-=amount;
      return true;
   }
   */
}
```

In this case ternary reduces 9 lines of code to 2 just as readable lines. Still I have not had the need for a shared pointer.

2.4 AccountInfo

To easily manage and return account info i created the following struct:

```
struct AccountInfo
{
   const unsigned int accountNo;
   const double balance;
   const double credit;
   const double available;
   //default constructor
   AccountInfo()
   :accountNo(0),balance(0),credit(0),available(0){}
   //constructor
   AccountInfo(const unsigned int pAccountNo,const double ↩
       pBalance, const double pCredit, const double pAvailable)
   :accountNo(pAccountNo),balance(pBalance),credit(pCredit),↩
       available(pAvailable){}
};
```

I return this struct upp through the textclasses:

$$Account \rightarrow Cutsomer \rightarrow Bank$$

All of them contain a function called:

```
ClassName::getAccountInfo(const unsigned int)
```

for whenever printing account info on specific account is needed.

3 Building/Compiling

Just run *make* in the Lab directory. To run the program run *make run* in same directory.

4 Enviroment

I'm programming on an Arch linux 64-bit system. I've got the gcc compiler installed and compile using it's g++ alias which links necessary libraries automatically. To compile I use the recommended flags: "-std=c++11 -Wall -pedantic". The flags let me choose to use c++11 standard and give me useful compiling warnings and errors. For editing of code i use VS code.

5 Backup

And if anything's missing you can find it on:
github: `https://github.com/Hergeirs/Cpp-Obj/tree/master/Level%202/Lab2`
Cpp-obj/Lab1

September 17, 2017