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1  //
2  // Shaun Chemplavil U08713628
3  // shaun.chemplavil@gmail.com
4  // C/C++ Programming III : Intermediate Programming with Objects
5  // 151116 Raymond L.Mitchell III
6  // SavingsAccount.cpp
7  // Win10
8  // Visual C++ 19.0
9  //
10 // File contains the display member function for the SavingsAccount class
11 //
12
13 #include <iostream>
14 #include "SavingsAccount.h"
15 using std::cerr;
16
17 // Static class variable
18 double ShaunChemplavil::SavingsAccount::annualInterestRate;
19
20 // Constructor
21 ShaunChemplavil::SavingsAccount::SavingsAccount(double initialBalance)
22 {
23     if (initialBalance < 0)
24     {
25         cerr << "\nERROR: INVALID INITIAL BALANCE!\n";
26         this->savingsBalance = 0.0;
27     }
28     else
29         this->savingsBalance = initialBalance;
30 }
31 // Member function returning the Account Balance
32 double ShaunChemplavil::SavingsAccount::getSavingsBalance() const
33 {
34     return this->savingsBalance;
35 }
36
37 // Member function to apply the monthly interest rate
38 void ShaunChemplavil::SavingsAccount::applyMonthlyInterest()
39 {
40     const double ANNUAL_TO_MONTHLY = 1.0 / 12.0;
41     this->savingsBalance *= (1 + this->annualInterestRate * ANNUAL_TO_MONTHLY);
42 }
43
44 // Member function to set the annual interest rate for ALL SavingsAccount objs
45 void ShaunChemplavil::SavingsAccount::setAnnualInterestRate(double newInterestRate)
46 {
47     const double INTEREST_RATE_TO_DEC = 0.01;
48     if (newInterestRate < 0)
49     {
50         cerr << "\nERROR: INVALID INTEREST RATE!\n";
51         ShaunChemplavil::SavingsAccount::annualInterestRate = 0.0;
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52     }  
53     else  
54         ShaunChemplavil::SavingsAccount::annualInterestRate = newInterestRate *  
55         INTEREST_RATE_TO_DEC;  
56 }
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