ASSIGNMENT 0, CSC1253/2, FALL 2010

Introduction to Programming with C++, Hartmut Kaiser
http://www.cct.lsu.edu/~hkaiser/fall_2010/csc1253.html

Due: Tuesday, September 7, 2010
Submitted electronically: before 12:00 PM
Submitted hard copy: at the beginning of class

STUDENT PERFORMANCE OBJECTIVES

On completion of the assignment you will be able to:

- Use the Pne COmposer (pico) editor on a UNIX terminal
- Use the GNU C++ compiler to compile a C++ source file
- Execute a C++ program
- Submit files to the class UNIX account using shell scripts on the classes server (classes.csc.lsu.edu).

PROGRAM SCENARIO

At this point we have not studied much C++ syntax. In spite of this you may be able to follow what this program does since most high-level computer languages look very similar to natural languages. The goal, however, is not to focus on syntax in this assignment, even though you will need to type correct syntax for the program to compile.

The program attached is a simple C++ program that calculates the total earnings based on interest earned and an initial investment.

Read Chapters 1, 2 and 3 from the course book (Stroustrup: Programming - Principles and Practice Using C++, ISBN 9780321543721), then type the program, compile and execute it. As the result you should see a screen output similar to the one shown below.

INTEREST-INVESTMENT CALCULATOR

Given an initial investment deposit of $100, your interactive session with the program should produce the following interaction with the user (program output is shown in bold, user input in italics):

  ENTER the $ amount of your initial deposit --> 100
  INITIAL_DEPOSIT:  100
  INTEREST_ACCRUED: 6.9
  ENDING_BALANCE:   106.9

END CALCULATOR PROGRAM
// Interest-Investment Calculator
// Your_Last_Name, Your_First_Name
// CSC 1253, Section 2, Assignment 0
// Instructor: Dr. Kaiser
// Due Date: September 7, 2010

// PROBLEM SPECIFICATION:
// to determine the bank savings balance after one year time of
// accruing interest.

// PROBLEM ANALYSIS:
// The user is prompted for the amount of the initial bank deposit.
// Using a predefined interest rate, the interest at the end of
// one year is calculated. The accumulated interest is added to the
// initial deposit to determine the balance at the end of one year.
// Output is displayed to the program user.

#include "../../include/std_lib_facilities.h"

int main()
{
    // Welcome program user
    cout << "\n\nInterest-Investment Calculator\n\n";

    // Request the initial deposit from the program user
    double deposit; // Initial deposit by the customer
    cout << "ENTER the $$ amount of your initial deposit --> ";
    cin  >> deposit;

    // calculate interest and balance after 1 year
    double const RATE = 6.9; // Interest rate
    double interest = deposit * (RATE / 100.0); // Interest earned in 1 year
    double ending_balance = deposit + interest; // Balance at the end of 1 year

    // echo input and display interest and new balance
    cout << "INITIAL DEPOSIT:  " << deposit << endl;
    cout << "INTEREST ACCRUED: " << interest << endl;
    cout << "ENDING BALANCE:   " << ending_balance << endl << endl;

    // close out
    cout << "END CALCULATOR PROGRAM\n\n";

    return 0;
} // end main function