Homework 2, CSCE 240, Summer 2016

Objectives

1. To gain expertise in C++ functions.
2. To gain expertise in C++ looping and control structure.
3. To gain expertise in C++ input and output, especially formatting.

Assignment

You are to create a program to compute accrued wealth based on a steady investment plan.

Your program will have a program file main.cc and will be compiled with a simple makefile.

Your program will prompt the user for the goal amount of accrued wealth, the investment per month, and the rate of return as a YEARLY percent. These can be input with or without decimal points, but they must be understood in your program as `double` values.

Your program will then echo the input back to the user (this time with decimal points) and then call a function to determine the number of months at the given investment and return rates in order to reach the accrued wealth goal.

If the yearly rate is the value of variable `rate`, then the return is to be calculated monthly at a rate of `rate/12.0` times the previous month's accrued total. This return is to be added to the investment along with the current month's investment.

Error Handling

If it should happen that the investment amount or the rate of return are negative, then your program should print an error message to that effect and not continue with the computation.

Examples

A sample of successful execution is in the test directory. This has a goal of one million dollars accrued, with an investment of 650 dollars per month and an expected rate of return of 5 percent. Note that the 5 comes in as 5.0 and then must be divided by 100 and by 12 to get a multiplier to be multiplied times the previous accrual.

Note also the fencepost condition for starting things up. At month 0, an investment is made. At month 1, that investment, plus the return for that month, plus the investment made at month 1, become the new total.