Assignment-3
Total points: 20
DUE: October 27, 11:59pm

Topics: computations, formatted printing, and algorithms.

Check <u>assignment instructions</u> document before submission in canvas. Write all your code in C++ for the following questions.

Amortization

Write a function that produces an amortization schedule. This is a schedule of payments on a loan. For example, suppose you borrow $100 at an interest tare of 12% and you make monthly payments of $2 per month. This will result in an interest of $\frac{12\%}{12 \, months} = 1\% = 0.01$ per month. In the first month you will owe $100(.01) = \$1$ in interest and pay $1 towards the principle. The next month you will only have borrowed $99 since you have already paid $1. This month you owe $99(.01) = \$0.99$ in interest and therefore you will give $2 - $0.99 = $1.01 towards the principle. And so on. See the sample schedule. You are to create a function given the
* loan amount,
* the yearly interest rate, and
* the monthly payment amount

as input. Print several schedules. Try a loan amount of $40,000, an interest rate of 7% per year, and a payment of $400 per month. Try other examples as well. You must divide the yearly interest rate by 12 to get the monthly interest rate. You are to produce a nicely formatted tabular output like below.

Principle: $10.00
Interest: 12%
Payment: $2.00

Principle	Int. Paid	Principle Paid	Ending Payment	Payment Balance	made on
10.00	0.10	1.90	2.00	8.10	_____
8.10	0.08	1.92	2.00	6.18	_____
6.18	0.06	1.94	2.00	4.24	_____
4.24	0.04	1.96	2.00	2.29	_____
2.29	0.02	1.98	2.00	0.31	_____
0.31	0.00	0.31	0.31	0.00	_____

The total amount of payment is $10.31.
The total interest paid is $0.31

The algorithm:

while principle > 0
       Interest paid = principle * interest rate
       Principle paid = payment - interest paid
       If (principle paid > principle)
           Principle paid = principle;
       New principle = principle - principle paid
       Print the next line of the schedule
       Principle = new principle