CS160 Lab 2 Fall 2006
Investments and Loan Amortization
Due Friday 9/22/2006 at 12:01AM

Create a file named `invest.py` that inputs the annual amount invested in an IRA (retirement account) at the beginning of each year, an annual interest rate, and the number of years. The program must output the value of the investment after the specified number of years. Remember that the interest compounds. The interest for the second year is calculated using both year's contribution and the interest earned on the first year's contribution (and so on).

Create a file named `loan.py` that prints a loan amortization table. The program must input the loan amount, annual interest rate, and number of years for the loan. The monthly payment can be found using the following formula assuming the interest rate is the monthly interest rate.

$$monthly\_payment = \frac{loan\_amt * interest\_rate}{1.0 - \frac{1}{(1.0+rate)^{months}}} \quad (1)$$

Each month, the interest for the month is calculated by taking the remaining loan balance multiplied by the monthly interest rate. The difference between the payment and the interest is the amount applied to reduce the principle. Each month, you are paying less interest and more towards the principle until the loan is paid off. For each month, your program should print the remaining balance, that month's interest, and the amount applied to the principle for that month. After the output for all the months, your program must print a blank line followed by a line with the payment amount and the total interest that was paid. Below is part of a sample run from the program:

```
Enter loan amount: 15000
Enter annual percentage rate (e.g., 0.05 for 5%): 0.07
Enter number of years: 4
14728.3063301 87.5 271.693669937
14455.0277804 85.9151202587 273.278549678
... (skipped lines)
7.17363946023e-11 2.08314473037 357.110525206

359.193669937 2241.29615696
```

Use descriptive variable names and comment your code, including putting your name and class time at the top of the file in comments.

Test both your programs with a couple different inputs to be certain they are working correctly. After you have commented and tested your code, submit your programs by emailing them to `dreed@capital.edu` as attachments (send one email with two attachments) with the appropriate subject line. You must use Capital's webmail as some email systems send attachments differently and I automatically extract the attachment based on the email address. Use the subject `CS160-1ATT` for the 1PM section and `CS160-2ATT` for the 2PM section.

The lab will be graded using the following point distribution:

Correctness	80
Style/Readability and Documentation	20