

Loan Project: Balloon Payment

The following program computes the balloon payment of a loan which is compounded yearly. The loan is for \$10,000, at an annual interest rate of 10% on the unpaid balance, with payments of \$2,000 per year for a duration of 5 years. The result is often a surprise!

```
-- Name Ann O'Nimous
-- Does Compute Balloon payment for a loan
  Box duration ofType int -- loan duration
  Box number   ofType int -- payment number

  Box balance  ofType real -- balance in dollars
  Box payment  ofType real -- payment per duration
  Box rate     ofType real -- interest rate, percent
  Box interest ofType real -- amount of the interest

-- start actions
Set balance = 10000.00 -- dollars
Set payment = 2000.00  -- dollars per year
Set rate    = 10.0     -- percent rate, per year
Set duration = 5       -- total duration, in years

Set number = 1
Repeat
  Set interest = balance * rate / 100.0
  Set balance  = balance + interest - payment
  Output      number -- to debug
  Output      " "    -- to debug
  OutputLn    balance -- go debug
ExitOn (number == duration)
  Set number = number + 1
EndRepeat

Output "The final balance (balloon payment) is "
OutputLn balance
```

Enter (copy and paste) and run this program, and then experiment with it, as follows:

Modify it if the compounding (paying, etc) is done monthly.
You may wish to delete or "comment out" the three "debug" lines.
Also update the comments within the program (including your name).

Modify it again if the compounding is done every 4 weeks (13 times a year).

Modify it again if the compounding is done weekly.

Modify it again if the compounding is done daily (365 days).

Make the program more general, friendly, and useful to a user. A typical interaction is:

```
Enter the intial loan amount (in dollars and cents): 10000.00
Enter the annual interest rate as a percent: 10.0
Enter the amount of each payment: 1000.00
Enter the duration, or number of years: 5
Enter the number of payments per year: 1
```

```
The final balance (balloon payment) is 10000.00
```

Other possible modifications include a better output (with only 2 digits for cents). This can be done in two ways. Test thoroughly especially for a small number of cents! You could also put commas every three decimal digits (as in \$12,345,678.09).