Loan Assignment

**S**et up a spreadsheet to compute the periodic loan payment for a standard “amortized” loan. Once the payment is computed, create a table showing how the P&I (Principle and Interest) will be “paid down” for the life of the loan. Be sure to test your spreadsheet carefully, and once you are sure all the formulas are working correctly, format it so:

* It will display on the minimum number of pages when printed – keep this in portrait orientation
* It will have the proper headers and footers on each page
* It will display the input area and field/column names on each page
* You will be able to view the input area and field/column names as you scroll through the amortization table

**A** demonstration on how to set this up will be presented in class:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Amount | $1,000.00 |  | Num Pmts | 4 |
| Rate | 10% |  | Per Pmt | $265.82 |
| Years | 1 |  | Total Paid | $1,063.27 |
| Pmts per Year | 4 |  | Total Int | $63.27 |
|  |  |  |  |  |
| Pmt # | Payment | Interest | Principle | Balance |
| 0 | $0.00 | $0.00 | $0.00 | $1,000.00 |
| 1 | $265.82 | $25.00 | $240.82 | $759.18 |
| 2 | $265.82 | $18.98 | $246.84 | $512.34 |
| 3 | $265.82 | $12.81 | $253.01 | $259.33 |
| 4 | $265.82 | $6.48 | $259.33 | $0.00 |
|  |  |  |  |  |
|  | $1,063.27 | $63.27 | $1,000.00 |  |

**Y**ou will then add several sheets to your file to demonstrate how you can use this spreadsheet to calculate the periodic loan payment for a variety of loans:

1. **O**nce you have the template created,
   1. Copy it to a new sheet.
   2. Rename the new sheet “School Loan”, and
   3. Modify it for a 10 year, $50,000 loan at 5.50% annual interest paid back in monthly installments.
   4. You’ll need to add/delete rows in order to display the correct number of periodic payments.
   5. Double check to make sure your loan displays correctly on the screen as well as in Print Preview mode.
2. **N**ext, copy the “School Loan” sheet and rename the new sheet “Auto Loan”.
   1. Modify the input area for a 5 year, $15,000 loan at 8.25% annual interest paid back in monthly installments.
   2. You’ll need to add/delete rows in order to display the correct number of periodic payments.
3. **T**hen, copy the “Auto Loan” sheet and rename the new sheet “Home Loan”.
   1. Modify the input area for a 30 year, $100,000 loan at 6.75% annual interest paid back in monthly installments.
   2. You’ll need to add/delete rows in order to display the correct number of periodic payments.
4. **I**nsert a new sheet to show how much you would pay each month if you had these loans.
   1. Set up a small table showing the Loan Type, the monthly payment, and the annual payment. Use 3-D references to pull the info from your loan sheets.
   2. Total these up so you’d know how much you’d pay for the year, for example if the monthly amount was 414.55, the yearly would multiply it by 12 to get 4,974.64.

|  |  |  |
| --- | --- | --- |
| **Loan Type** | **Monthly** | **Yearly** |
| School | $ 414.55 | $ 4,974.64 |
| Auto | $ 360.94 | $ 4,331.23 |
| Home | $ 648.60 | $ 7,783.18 |
|  |  |  |
| Total | $ 1,424.09 | $ 17,089.05 |

5. **C**hoose one of the loans that you created (school, auto, or home). Copy this sheet, and modify it using “current” loan data, e.g. estimate how much you would need to borrow to pay off your school loans, or buy the car/home you’d like to have. Do some research to find the current interest rate to pay off such a loan.

6. **F**inally, set up the “loan sensitivity table” shown below. Use Conditional Formatting to highlight all those loan combinations that would be less than some amount, e.g. $500.00

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Amount | $80,000.00 | $2,000.00 | Num Pmts | 360 |  |
| Rate | 5.000% | 0.500% | Per Pmt | $429.46 | $500.00 |
| Years | 30 |  | Total Paid | $154,604.63 |  |
| Pmts per Year | 12 |  | Total Int | $74,604.63 |  |
|  |  |  |  |  |  |
|  | 5.000% | 5.500% | 6.000% | 6.500% | 7.000% |
| $80,000.00 | $429.46 | $454.23 | $479.64 | $505.65 | $532.24 |
| $82,000.00 | $440.19 | $465.59 | $491.63 | $518.30 | $545.55 |
| $84,000.00 | $450.93 | $476.94 | $503.62 | $530.94 | $558.85 |
| $86,000.00 | $461.67 | $488.30 | $515.61 | $543.58 | $572.16 |
| $88,000.00 | $472.40 | $499.65 | $527.60 | $556.22 | $585.47 |
| $90,000.00 | $483.14 | $511.01 | $539.60 | $568.86 | $598.77 |
| $92,000.00 | $493.88 | $522.37 | $551.59 | $581.50 | $612.08 |
| $94,000.00 | $504.61 | $533.72 | $563.58 | $594.14 | $625.38 |
| $96,000.00 | $515.35 | $545.08 | $575.57 | $606.79 | $638.69 |

**W**hen you have completed all your work, make sure you link this to your web page (call the file Loan.xlsx).

**P**rint out a copy of the Auto spreadsheet, the loan summary sheet, and the loan sensitivity sheet, staple them together than turn them in.