

# CS130 Software Tools

## Assignment 1: Loan Calculations

**Date Assigned:** Wednesday, September 13, 2006

**Date Due:** Wednesday, September 20, 2006

**Points:** 50

### Background Information

Most college students will accumulate some kind of debt before graduation. In some cases this debt can be quite high. As you well know, the debt in many cases is made up of *Perkins Loans* and *Stafford Loans*.

The *Perkins Loan* is available for undergraduate and graduate students in award amounts of up to \$4,000 per year for undergraduate students (\$20,000 maximum) and up to \$6,000 per year for graduate students (\$40,000 maximum including undergraduate loans). The amount of loan depends on need, other aid, and fund availability of the school. The interest rate is 5% and the lender is the school who loaned you the money. You have up to 10 years to repay the loan.

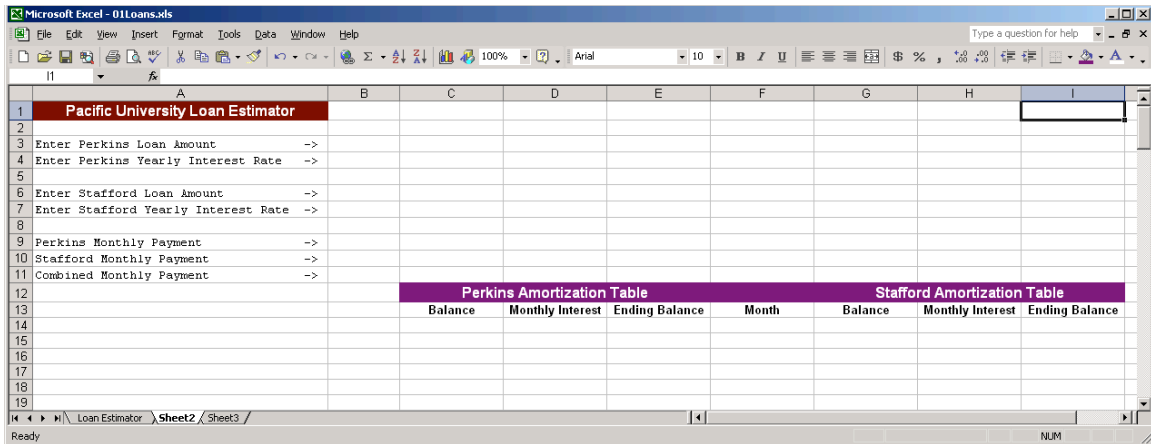
The *Stafford Loan* is available for undergraduate students and the amount varies based on the year in school and whether the student is a dependent or not. For the purpose of this assignment, we will assume the student is a dependent so for year one the amount available is \$2,625, year two is \$3,500, year three is \$5,500, and year four is \$5,500 with a maximum of \$23,000. The interest rate is variable and recomputed on a yearly basis. You have from 10 to 30 years to pay the loan back depending on the repayment plan and the amount owed.

I'm going to leave out other details of the loans because I just want to give you a general feel for what all of this means.

While grants and work-study do not have any interest associated with them, the same **cannot** be said for loans. That is, you must pay interest on each of the loans previously mentioned. Further, these loans cannot be canceled and will impact your credit history and rating. Also, there are subsidized loans where the Department of Education pays the interest while you are in school half-time or more and for the first six months after you leave school. There is also a possible deferment period that I won't go into. We will assume that all loans are subsidized.

# Assignment

I would like you to produce the following worksheet as it exists below. Make sure that cells B3, B4, B6, B7, B9, B10, and B11 are filled in with correctly calculated values and fill in the amortization table beginning in row 14 for both the Perkins and Stafford loans assuming a 10 year payment schedule. You will notice that the amortization table shows monthly (not yearly) results, which is what I'm looking for. If you produce a correct amortization table, both of the Perkins and Stafford balances will be exactly zero at month 120. As summary information, place totals in cells D136 and H136 for the total amount of interest paid over the life of the Perkins and Stafford loans respectively.



The actual color graphic of the above image that you are to use for this assignment can be found at: <http://zeus.cs.pacificu.edu/shereen/cs130f06/01loans.JPG>

## Important Notes

- 1) Use a Perkins loan amount of \$16,000.00 at a yearly interest rate of 5% and a Stafford loan amount of \$17,125.00 at a yearly interest rate of 4.5%.
- 2) Assume that the payment is made on the first day of each month.
- 3) Rename the worksheet as Loan Estimator.
- 4) Save the Excel file as '01LoansXXXXXXXX', where XXXXXXXXX is replaced with your PU Net ID. Mine would be called '01Loanskhoj0332'.
- 5) Split the screen so that the first 20 rows and the last 8 rows (including the interest totals) of the worksheet are showing on the screen when I open the file for grading.

## How to Submit and Grading Policies

- A copy of your single Excel file with the single worksheet is to be placed in the CS130 Drop Box by 6pm on the due date to be considered on time.
- Grading will be based on:
  - Correctness of your results
  - Completeness of your results
  - Professional look of the worksheets as described and shown above
  - Ability to perform a what-if analysis by changing any of the user input data with accurate results correctly displayed based on the changed data