CS130 Assignment #1

Date Assigned: Wednesday, September 7, 2016
Date Due: Wednesday, September 14, 2016 2:15 pm
Points: 50

In a Workbook called **PUNetIDExcel**, create each of the following worksheets:

Worksheet #1 (Name it **Flu Virus)**

A college campus has 5,000 students and one student returned from a vacation with a contagious flu virus. It is estimated that the virus will spread throughout the student body by the given formula:

$$f(t) = \frac{P}{1 + (P-1)e^{-0,8t}}$$

This formula says that given a student population P, there will be f(t) infected students after t days.

You are to create a worksheet showing the spread of the virus every six hours for fifteen full days.

	A	B	C	D	E
1	Student Population	5000			
2	Days Since Initial Infection	0			
3	Total Infected Students	1.00			
4					
5			Hours	Days	Infected Students
6			0	0	1.00
7			6	0	1.22
8			12	0	1.49
9			18	0	1.82
10			24	1	2.22

In cell G1 you are to place an Excel comment that answers the question: How many students are infected after 4 days? Make sure your answer and comment are showing.

In cell H1 you are to place an Excel comment that answers the question: After how many days will there be 2500 infected students? Make sure your answer and comment are showing.

Worksheet #2 (Name it **College Debt)**

The Project on Student Debt (http://www.projectonstudentdebt.org) has put together some interesting statistics on how much debt students leave college with broken down by US state. If you click on Oregon, you can find the average debt for a Pacific University student.

Using the average student debt for a Pacific University student and a fixed payment amount after graduation, you are to design a worksheet that allows the user the ability to input the following information.

1) Student Debt
2) Loan Annual Interest Rate
3) Years to Pay off the Debt

You are to then compute the monthly payment that is required to pay off the Debt in the given number of years. The loan payment formula is:

$$P = \frac{r(PV)}{1-(1+r)^{-n}} \; where \; P = payment, PV = present\ value, r = rate\ per\ period, n =$$
$$number\ of\ periods$$

Beginning in row seven, you are to create the following table with the heading Beginning Balance in column C, Monthly Interest in column D and so on in the order listed below. Expand this table down the worksheet until the Ending Balance becomes zero.

1) Beginning Balance - balance at the beginning of the month
2) Monthly Interest - interest charged for the month which is calculated prior to subtracting off the minimum payment
3) Payment - monthly payment
4) Ending Balance - beginning balance plus monthly interest minus payment
5) Month – a number starting at 1

Note1: Use the Pacific University data found on the website above for the Debt, an Annual Interest Rate of 5% and assume the student wants to pay off the loan in 10 years.

Note2: Here is a sample of what I'm looking for. Use whatever colors you want but make sure the information is in the cells shown below and formatted as shown. Further, I must be able to change information in cells B1 and B2 and the worksheet is updated correctly.

	A	B	C	D	E	F	G
1	Student Debt	$1,000.00					
2	Annual Interest Rate	5%					
3	Years To Pay Loan	10					
4	Monthly Payment	$10.61					
5	Total Interest Paid	$272.79					
6							
7			Beginning Balance	Monthly Interest	Payment	Ending Balance	Month
8			$1,000.00	$4.17	$10.61	$993.56	1
9			$993.56	$4.14	$10.61	$987.09	2

How to Submit and Grading Policies
A copy of your single Excel file (properly named) with the two worksheets (properly named) is to be placed in the CS130-01Drop Box by **2:15pm** 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 above and discussed in class
- Ability to perform a what-if analysis by changing any of the user input data with accurate results computed and displayed in the worksheet.

For each worksheet:

1. Clearly label all the data, and use the cell formatting options to make this spreadsheet easy to read and to give it a professional look.

2. Use Named Cells where appropriate.