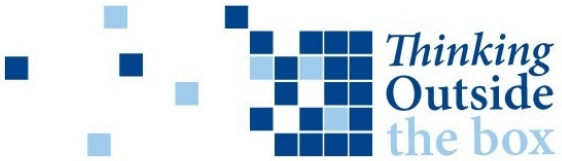
CIS 470 – iOS Programming
Test 2 – $how Me The Money
(take-home portion)



$10,000 placed in a bank savings account accumulating interest compounded annually at today's interest rate of %0.07 will grow to $10,212.15 in 30 years. The same amount invested in a mutual fund compounded annually at the expected average rate of 9% will grow to $132,676.78 in the same amount of time. (Hint: don't park your dollars at a bank!).
The power of compounding interest is best illustrated with an interest calculator using the "Future Value" formula:

$$FV = PV \times (1+APR)^{Years}$$

where,

PV is the "present value" of the investment
APR is the annual percentage rate
Years is the number of years the investment will be allowed to grow and
FV is the "future value" of the investment

In both of the examples above, *PV* = $10,000 and *Years* = 30. In the first example, APR = 0.07% and in the second example, APR = 9%:

Example 1

FV = $10,000 * (1+0.0007)^{30}
= $10,212.15

Example 2

FV = $10,000 * (1+0.09)^{30}
= $132,676.78

Your assignment is to develop a class to calculate the future value of investments. Your class will have three properties and two public methods. The three properties are presentValue, a Double, APR, a Double and years, an Int. Your class will have a public method call getFutureValue() which accept no parameters and returns a Double. For privacy reasons, you will need to add a second method called clearUserData(). This function accepts no parameters and returns nothing. Its sole function is to set all public properties (presentValue, years and APR) to zero thereby erasing the previous user's input. Any additional functions and properties you create should be private. To use your class, a user will first instantiate it, assign values to the properties presentValue, years and APR, then call getFutureValue(). After using it, the user should call clearUserData().

Name your class InterestCalc and save it all by itself in a swift file with the same name. Instantiate your class and use it in a program that prompts the user for presentValue, years and APR. The program should then compute the future value and print the results to the screen. The program should also print a message reassuring the user not to worry, because her private data has been erased.