Homework #3

1. Start with the simple DNA -> Protein translation program we wrote in class today (you can download it from the class site). Let's assume that we've dealt with identifying a promotor, etc, and that the sequence we're getting is within a few residues of being the start of a coding region of DNA. However, the exact frame hasn't been identified, and clearly if we start with a frame shift we'll get the wrong sequence. Modify the program to identify the correct frame by assuming the first ATG we find represents the beginning of the coding region, then translate only until a stop codon is found. example: if your program were given 'gatggcagct aaagacgtaa aatgaaaa' it should produce ‘maakdvk'

2. Write a simplified amortization program, that is, a program that keeps track of how much you still owe on a loan. We will simplify the math a bit: Assume that each month, the amount increases by the balance times 1/12 the interest rate and decreases by the amount of the fixed monthly payment. You should ask the user for the amount of the loan, the annual percentage interest rate, and the payment amount. For each month, print the payment number, interest for the month, and the remaining balance on the loan after the payment. Continue to write out new months until the loan is payed off.

   To hand in your homework: Create a ".py" file containing each program. Attach the text file to the email you send me. Please send the solution in an email message with the subject "Homework 3". sludtke@bcm.edu