Homework #3

- BEGIN THINKING ABOUT WHAT TO DO FOR YOUR CLASS PROJECT
- Problem 1)

  We have a dictionary which maps a person's name to his position, and we want to produce the opposite dictionary, ie - one where the position is the key and the name is the value. Consider the following

  a={ "joe":"programmer","steve":"professor","george":"postdoc","fred":"student" }

  A) Write code which will take a, and produce b:

  b= {'professor': 'steve', 'postdoc': 'george', 'programmer': 'joe', 'student': 'fred'}

  B) Now consider the problem if a is extended: a["frank"]="student" and a["sarah"]="programmer". How would you solve the inverse dictionary problem now ?

  Turn in code for A and B

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- Problem 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 you are charged 1/12 of the annual percentage rate on the remaining balance of the loan. The amount of the monthly payment will be constant.

  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.

  Send by email the program (.py file) and the output from a run of the program with a $150,000 loan at 5% interest and a $1500 monthly payment