**CS150 Assignment 4**

Complete both programs and submit to Katie in separate .py files. Be sure to include documentation (appropriate comments at the beginning and through the program). Text files needed are posted on Katie.

**Program 1: Capitalizing the Vowels**

**Topic:** File input and output

**Filenames:** vowels.py, vowels.txt, vowelsUpper.txt

Write a program (‘vowels.py’) to:

* define a function to read the contents of a file (‘vowels.txt’)
* define a function to convert all vowels in the message (contents of the file) to uppercase and write the converted message to a file ‘vowelsUpper.txt’
* define a function main to **ask user for file name**, call appropriate functions as needed, display original message and converted message

Be sure to include comments. Test your program on multiple text files. Here is one example:

Text file: ‘vowels.txt’

Old McDonald had a farm; e-i-e-i-e. (and don't forget 'u'.)

aBCDeFGHiJKLMNoPQRSTuVWXYZ

**SAMPLE RUN** (user input in bold)

Enter file name: **vowels.txt**

Old McDonald had a farm; e-i-e-i-e. (and don't forget 'u'.)

aBCDeFGHiJKLMNoPQRSTuVWXYZ

Old McDOnAld hAd A fArm; E-I-E-I-E. (And dOn't fOrgEt 'U'.)

ABCDEFGHIJKLMNOPQRSTUVWXYZ

Would result in text file: ‘vowelsUpper.txt’

Old McDOnAld hAd A fArm; E-I-E-I-E. (And dOn't fOrgEt 'U'.)

ABCDEFGHIJKLMNOPQRSTUVWXYZ

**Program 2: Exchange Rates**

**Topic:** Dictionary

**Filenames:** exchangeRate.py and exchangeRate.txt

The text file ‘**exchangeRate.txt’** gives information about the currencies of 49 major countries. The first eight lines of the file are as follows:

America,Dollar,1

Argentina,Peso,15.49

Australia,Dollar,1.36

Austria,Euro,0.944245

Belgium,Euro,0.944245

Brazil,Real,3.38385

Canada,Dollar,1.35055

Chile,Peso,677.719971

Each line of the file gives the name of a country, the name of its currency, and the number of units of the currency that equals one American dollar (called the *exchange rate)* as of 2016. For example, one American dollar is equal to 677.719971 Chilean pesos. Using the text file, write a program that requests the name of a country as input and then displays the name of its currency and its exchange rate. If the country is not found, an appropriate message should be displayed. Read the data into a list and then convert to a dictionary with the key being the country name, and the value being a tuple of the currency name and currency units. For example:

{‘America’: (‘Dollar’, ‘1’), ‘Argentina’: (‘Peso’, ‘15.49’), … etc. }

Sample Runs (user input shown in bold)

Enter the name of a country: **Turkey**

Country: Turkey

Currency: Lira

Exchange rate: 3.366395

Enter the name of a country: **Australia**

Country: Australia

Currency: Dollar

Exchange rate: 1.36

Enter the name of a country: **Cuba**

Cuba not found