**Level 1: Basic ASCII Coding**

1. Research the "ASCII Code"
   1. Explain what ASCII stands for.
   2. Explain how to convert a letter into an ASCII coded number
   3. Explain how to de-code an ASCII number into a letter
2. Open a new Python Repl and run the sample program provided at the end of this module.
   1. Briefly summarize what the "asciiCodes" list does
   2. Briefly summarize what the "textCoder" function does
   3. Briefly summarize what the "textDeCoder" function does
   4. Briefly summarize what the main program code does
3. Explain the main limitation of the program.

**Level 2: Extending The Program**

1. Modify the sample program to do the following (Still using the ASCII code):
   1. Code all of the uppercase and lower case letters
   2. Code the digits 0 to 9
   3. Code at least 5 special characters (e.g. "1?$%&")
2. Verify that your program works for ***coding*** a message containing all of the basic and special characters.
   1. Provide a sample of your program output below.
3. Verify that your program works for ***de-coding*** a message containing all of the basic and special characters.
   1. Provide a sample of your program output below.
4. List your program modifications below:

**Level 3: Creating A Secret Code**

1. Modify the sample program to create your own secret code that is different from the ASCII code:
   1. Work with a partner to create a secret code that codes letters and characters into different letters and characters.
   2. Your program should be able to create a coded message that   
      you can give to your partner
   3. Your program should be able to de-code a coded message that   
      you get from your partner
2. Provide a sample of your program output below.
   1. Show how your program codes a secret message
   2. Show how your program de-codes a secret message
3. List your program modifications below:

**Appendix: Sample Program**

"""

This program is currently immited to converting only the

characters "ABCD" and "abcd". The "asciiCodes" list can be easily

extended to include more letters and special characters.

This program currently uses the ASCII codes for converting text.

You can easily create your own secret code by changing the numbers

in the "asciiCodes" list.

"""

asciiCodes = [("A",65),("B",66),("C",67),("D",68)]

asciiCodes += [("a",97),("b",98),("c",99),("d",100)]

# This function codes the specified textChar into a

# three digit number padded with zeroes

def textCoder(textChar) :

for textCode in asciiCodes :

if (textCode[0] == textChar) :

return format(textCode[1],'03')

return "000"

def textDeCoder (codedChar) :

if (codedChar == "") or (codedChar == "000") :

return " "

for textCode in asciiCodes :

if (textCode[1] == int(codedChar)) :

return textCode[0]

return " "

# MAIN PROGRAM CODE STARTS HERE

print("Enter a password to code.")

textIn = input("password: ")

codeOut = ""

for textChar in textIn :

codedChar = textCoder(textChar)

codeOut = codeOut + codedChar + " "

#print("char: ",textChar," ASCII Coded char: ", codedChar)

print("Coded string is: ",codeOut)

print(" ")

print("Enter a coded password to decode")

print("(or return to use the Coded string)")

codeIn = input("Code: ")

if codeIn == "" :

codeIn = codeOut

codeList = codeIn.split(" ")

textOut = ""

for codedChar in codeList :

if (codedChar != "") :

textChar = textDeCoder(codedChar)

textOut += textChar

#print("ASCII Coded char: ", codedChar," decoded char: ",textChar)

print("DeCoded string is: ",textOut)