alph=str(" abcdefghijklmnopqrstuvwxyz") #each letters location on alphabet quest=str("ed") #Used to figure out which function the user wants line=str() #creates the line string that will be used to print the final line x=0 #sets x to zero and sets up the loops crypt= str(input("type e for encrypt d for decrypt ")) #prompts user to know which function they want num1= int(input("what is first number ")) #prompts user to know what the first number needed for encryption is num2=int(input("what is the second number ")) #prompts user to know what the Second number needed for encryption is t=quest.find(crypt) #determines if user wants the encrypt or decrypt function if (t==0): #checks to see if user said encrypt word=str(input("what do you want encrypted: ")) #prompts user to create the message they want encrypted for x in range (len(word)): #sets a loop to encrypt each letter letter=word[x] #identifies the letter that needs encrypting letter=letter.lower() #sets letter to lowercase so it fits the standard the alphabet is in letter=alph.find(letter) #finds the letter position in the alphabet and turns the letter into the number that it's placed in num1=num1+(num2*x) #Generates the number that will be used to encrypt the letter letter=(letter+num1) %26#uses previous number to generate a seemingly number between 0-26 letter=alph[letter]#converts number back into a letter line=line+letter #adds that letter to the final line that needs to be printed print(line)#prints the final result if(t==1): #checks to see if user said decrypt word=str(input("what do you want decrypted: ")) #prompts user to create the message they want decrypted for x in range (len(word)): #prompts user to give the message they want decrypted letter=word[x] #identifies the letter that needs encrypting letter=letter.lower() #sets letter to lowercase so it fits the standard the alphabet is in letter=alph.find(letter) #finds the letter position in the alphabet and

turns the letter into the number that it's placed in

 $\label{lem:num1+num2+x} num1 = num1 + (num2*x) \ \# Generates \ the \ number \ that \ will be used to decrypt the letter$

letter=(letter-num1)%26 # does the formula from the encryption part but in reverse

letter=alph[letter]#converts number back into a letter

line=line+letter #adds that letter to the final line that needs to be printed

print(line)#prints the final result