

code for this project rather than
using Project 7 or 8 with no changes.

11. Your country is at war and your enemies are using a secret code to communicate with each other. You have managed to intercept a message that reads as follows:

:mmZ\dxZmx]Zpgy

The message is obviously encrypted using the enemy's secret code. You have just learned that their encryption method is based upon the ASCII code. Appendix 3 shows the ASCII character set. Individual characters in a string are encoded using this system. For example, the letter "A" is encoded using the number 65 and "B" is encoded using the number 66.

Your enemy's secret code takes each letter of the message and encrypts it as follows:

```
if (originalChar + key > 126) then
    encryptedChar = 32 + ((originalChar + key) - 127)
else
    encryptedChar = (originalChar + key)
```

For example, if the enemy uses key = 10 then the message "Hey" would be encrypted as:

Character	ASCII code
H	72
e	101
y	121

Encrypted H = $(72 + 10) = 82 = \text{R in ASCII}$

Encrypted e = $(101 + 10) = 111 = \text{o in ASCII}$

Encrypted y = $32 + ((121 + 10) - 127) = 36 = \$ \text{ in ASCII}$

Consequently, "Hey" would be transmitted as "Ro\$."

Write a program that decrypts the intercepted message. The ASCII codes for the unencrypted message are limited to the visible ASCII characters. You only know that the key used is a number between 1 and 100. Your program should try to decode the message using all possible keys between 1 and 100. When you try the valid key, the message will make sense. For all other keys, the message will appear as gibberish.

12. Write a program that reads a line of text from the console. The time should be limited to 10 seconds.