Exercise 138: Text Messaging

(*21 Lines*)

On some basic cell phones, text messages can be sent using the numeric keypad. Because each key has multiple letters associated with it, multiple key presses are needed for most letters. Pressing the number once generates the first character listed for that key. Pressing the number 2, 3, 4 or 5 times generates the second, third, fourth or fifth character.

Key	Symbols
1	. , ? ! :
2	A B C
3	D E F
4	G H I
5	J K L
6	M N O
7	P Q R S
8	T U V
9	W X Y Z
0	*space*

Write a program that displays the key presses needed for a message entered by the user. Construct a dictionary that maps from each letter or symbol to the key presses needed to generate it. Then use the dictionary to create and display the presses needed for the user's message. For example, if the user enters `Hello, World!` then your program should output `4433555555666110966677755531111`. Ensure that your program handles both uppercase and lowercase letters. Ignore any characters that aren't listed in the table above such as semicolons and parentheses.

Exercise 139: Morse Code

(*15 Lines*)

Morse code is an encoding scheme that uses dashes and dots to represent digits and letters. In this exercise, you will write a program that uses a dictionary to store the mapping from these symbols to Morse code. Use a period to represent a dot, and a hyphen to represent a dash. The mapping from characters to dashes and dots is shown in Table 6.1.

Your program should read a message from the user. Then it should translate all of the letters and digits in the message to Morse code, leaving a space between each sequence of dashes and dots. Your program should ignore any characters that are not listed in the previous table. The Morse code for `Hello, World!` is shown below:

```
.... . .-.. .-.. --- .-- --- .-. .-.. -..
```