Associations are paired pieces of information. For example a word and its dictionary definition, or a letter and its vertical mirror image:

A:
a:
B:B
b:p

etc.

There is a *mapping* from one part of the pair to the other.

- Dictionaries or maps are sets of associations (pairs).
- They are used to store data for easy lookup purposes.

- Dictionaries are implemented with an STL map:
  ```cpp
  map<string,string> englishDictionary;
  map<char,char> verticalMirrorImages;
  map<int,char> keyboardCodes;
  ```

- Data is added to a map:
  ```cpp
  verticalMirrorImages['A'] = ' ';
  verticalMirrorImages['a'] = ' ';
  verticalMirrorImages['B'] = 'B';
  verticalMirrorImages['b'] = 'p';
  ```
  etc.

- Data is found in a map using [] but with a first pair member, not an index:
  ```cpp
  cout << "Enter a character: ";
  cin >> ch;
  if (verticalMirrorImages[ch] != ' ')
  {
    cout << "Vertical mirror image of " << ch << " is"
    << verticalMirrorImages[ch] << "\n";
  }
  else
  {
    cout << "No vertical mirror image for " << ch << "\n";
  }
  ```

**Task**

Write a program that takes a sentence and outputs it in code, where the code is simply a mapping from each character to the character in the same position starting from the end of the alphabet. (Yes it can be done with arithmetic, but use a map for practice!) Spaces and punctuation should be ignored.