

1. Represent a small bilingual lexicon as a Python dictionary in the following fashion `{"merry": "god", "christmas": "jul", "and": "och", "happy": "gott", "new": "nytt", "year": "år"}` and use it to translate your Christmas cards from English into Swedish. That is, write a function `translate()` that takes a list of English words and returns a list of Swedish words.
2. Using the higher order function `reduce()`, write a function `max_in_list()` that takes a *list* of numbers and returns the largest one.
3. In cryptography, a *Caesar cipher* is a very simple encryption technique in which each letter in the plain text is replaced by a letter some fixed number of positions down the alphabet. For example, with a shift of 3, A would be replaced by D, B would become E, and so on. The method is named after Julius Caesar, who used it to communicate with his generals. *ROT-13* ("rotate by 13 places") is a widely used example of a Caesar cipher where the shift is 13. In Python, the key for ROT-13 may be represented by means of the following dictionary:

```
key = {'a': 'n', 'b': 'o', 'c': 'p', 'd': 'q', 'e': 'r', 'f': 's', 'g': 't', 'h': 'u',  
      'i': 'v', 'j': 'w', 'k': 'x', 'l': 'y', 'm': 'z', 'n': 'a', 'o': 'b', 'p': 'c',  
      'q': 'd', 'r': 'e', 's': 'f', 't': 'g', 'u': 'h', 'v': 'i', 'w': 'j', 'x': 'k',  
      'y': 'l', 'z': 'm', 'A': 'N', 'B': 'O', 'C': 'P', 'D': 'Q', 'E': 'R', 'F': 'S',  
      'G': 'T', 'H': 'U', 'I': 'V', 'J': 'W', 'K': 'X', 'L': 'Y', 'M': 'Z', 'N': 'A',  
      'O': 'B', 'P': 'C', 'Q': 'D', 'R': 'E', 'S': 'F', 'T': 'G', 'U': 'H', 'V': 'I',  
      'W': 'J', 'X': 'K', 'Y': 'L', 'Z': 'M'}
```

Your task in this exercise is to implement an encoder/decoder of ROT-13. Once you're done, you will be able to read the following secret message:

Pnrfne pvcure? V zhpu cersre Pnrfne fnynq!

Note that since English has 26 characters, your ROT-13 program will be able to both encode and decode texts written in English.