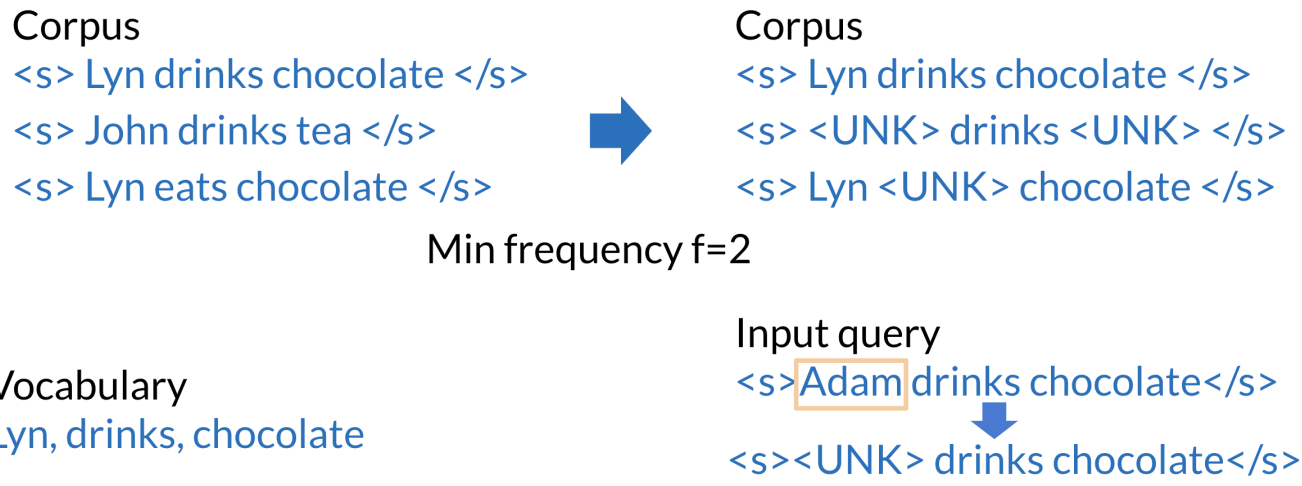
# Out of Vocabulary Words

Many times, you will be dealing with unknown words in the corpus. So how do you choose your vocabulary? What is a vocabulary?

A vocabulary is a set of unique words supported by your language model. In some tasks like speech recognition or question answering, you will encounter and generate words only from a fixed set of words. Hence, a **closed vocabulary**.

**Open vocabulary** means that you may encounter words from outside the vocabulary, like a name of a new city in the training set. Here is one recipe that would allow you to handle unknown words.

- Create vocabulary V
- Replace any word in corpus and not in V by <UNK>
- Count the probabilities with <UNK> as with any other word




The example above shows how you can use *min_frequency* and replace all the words that show up fewer times than *min_frequency* by UNK. You can then treat UNK as a regular word.

**Criteria to create the vocabulary**

- Min word frequency f
- Max |V|, include words by frequency
- Use <UNK> sparingly (Why?)
- Perplexity - only compare LMs with the same V