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Part 1

Considerations:

1. **“What do you do with a word that appears in the train set and not in the dev set? Which word embeddings will you assign to it?”**

We've built a vocabulary based on the train set. We added a word '*UNKNOWN*' to it and gave its own word embedding. So, every 'new' word we encounter in the dev set (or in train set), we change this word to be *UNKNOWN*.

For example, if we get the sentence “John is graduating in August” and the word ‘graduating’ is not in our vocabulary, we'll get “John is *UNKNOWN* in August”

2. **“What vectors will you use for the words surrounding the first word in the sequence? And for the last word?”**

In order to be able to slide a window of size 5 on the whole sentence, we padded each sentence at the beginning and at the end. We added 2 words to the vocabulary:

START and *END*. Each of them gets its word embedding.

So for the example from above we get:

“*START* *START* John is *UNKNOWN* in August *END* *END”.

The first window is [*START*, *START*, *John*, 'is', '*UNKNOWN*']

...

And the last window is [*UNKNOWN*, 'in', 'August', *END*, *END*]

Parameters for NER:

epochs: 15
learning rate: 0.01
hidden-layer: 200

Parameters for POS:

epochs: 8
learning rate: 0.01
hidden-layer: 150

