Training naïve Bayes

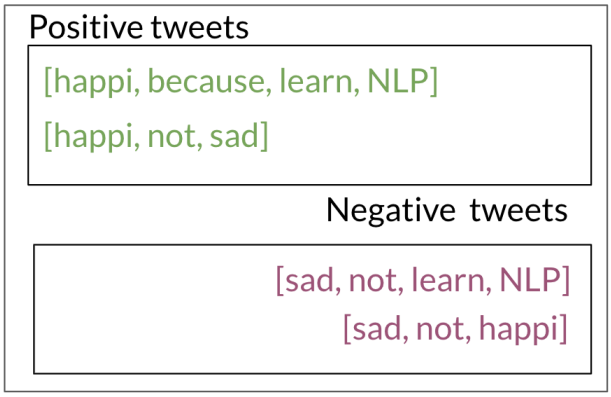
To train your naïve Bayes classifier, you have to perform the following steps:

1) Get or annotate a dataset with positive and negative tweets

2) Preprocess the tweets: process_tweet(tweet) → [w1, w2, w3, ...]:

- Lowercase
- Remove punctuation, urls, names
- Remove stop words
- Stemming
- Tokenize sentences

3) Compute freq(w, class):



Step 2: Word count

word	Pos	Neg
happi	2	1
because	1	0
learn	1	1
NLP	1	1
sad	1	2
not	1	2
N_{class}	7	7

freq(w, class)

4) Get $P(w|pos), P(w|neg)$

You can use the table above to compute the probabilities.

5) Get $\lambda(w)$

$\lambda(w) = \log \frac{P(\text{w|pos})}{P(\text{w|neg})}$

6) Compute $logprior = \log(P(pos)/P(neg))$

$\text{logprior} = \log \frac{D_{pos}}{D_{neg}}$, where D_{pos} and D_{neg} correspond to the number of positive and negative documents respectively.