Spam detection using Naive Bayes

If any word which is "spam", so having this word what is the probability of the message is spam.

$$P(spam|w) = \frac{P(w|spam)\,P(spam)}{P(w)}$$

($P(spam|w)$: given that this word appears, how likely is it that the msg is spam;)

($P(w|spam)$: in spam how freq this words appears.)

($P(spam)$: how much spam we have)

($P(w)$: how frequent this word appears in dataset.)

$$P(spam) = \frac{\#\text{ of spam msgs}}{\#\text{ of all msgs}}$$

$$P(w) = \frac{\#\text{ of msgs that this words appear}}{\#\text{ of all msgs}}$$

$$P(w|spam) = \frac{\#\text{ of this word appears in spam}}{\#\text{ of spam msgs}}$$