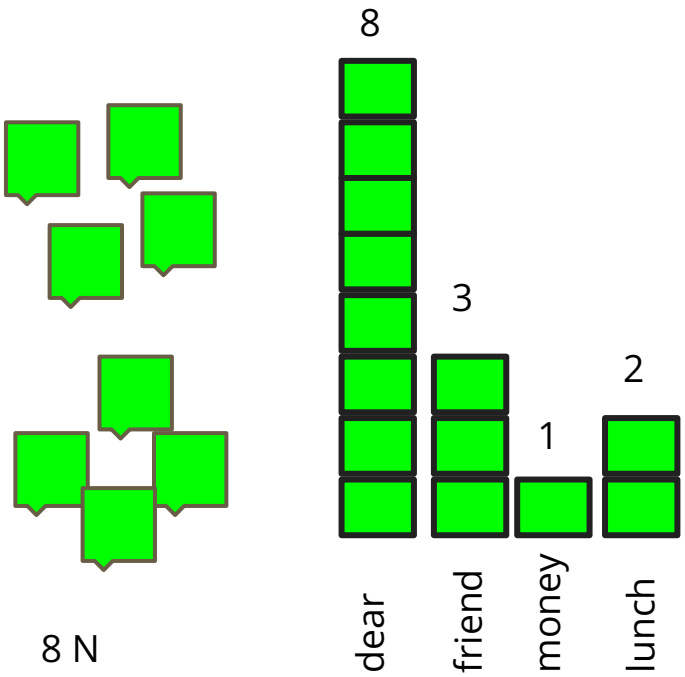
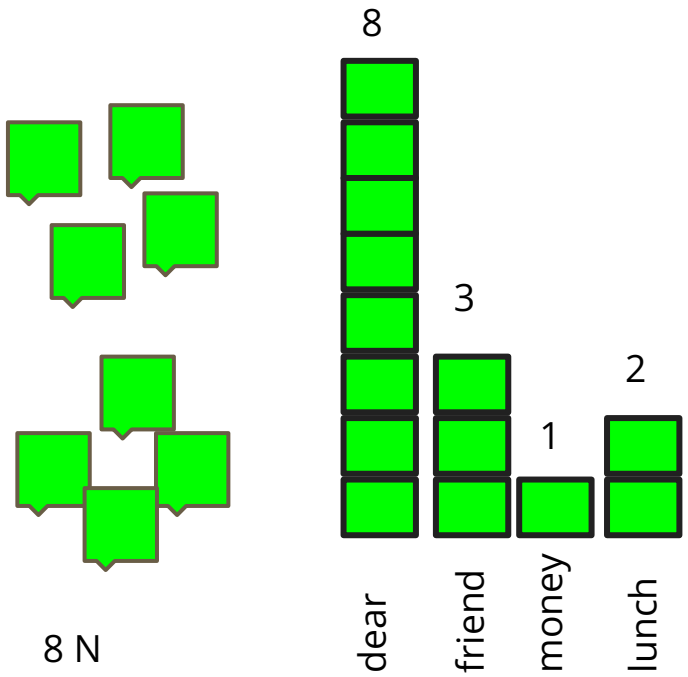
Projet Machine Learning I

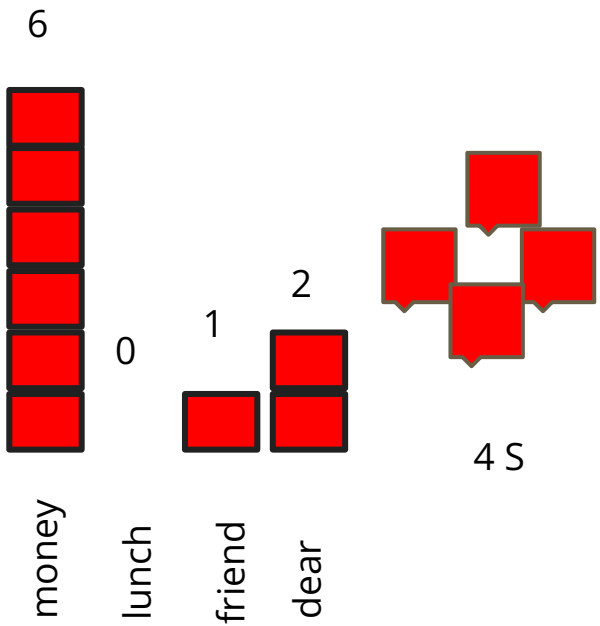
Konstantin Todorov, Pascal Poncelet, Gaoussou Sanou

Modèle Naïve Bayes



Modèle Naïve Bayes





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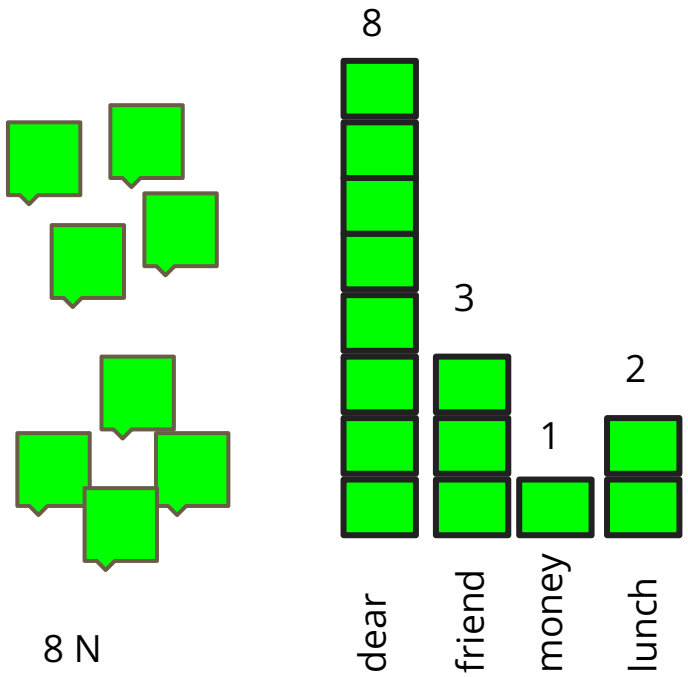
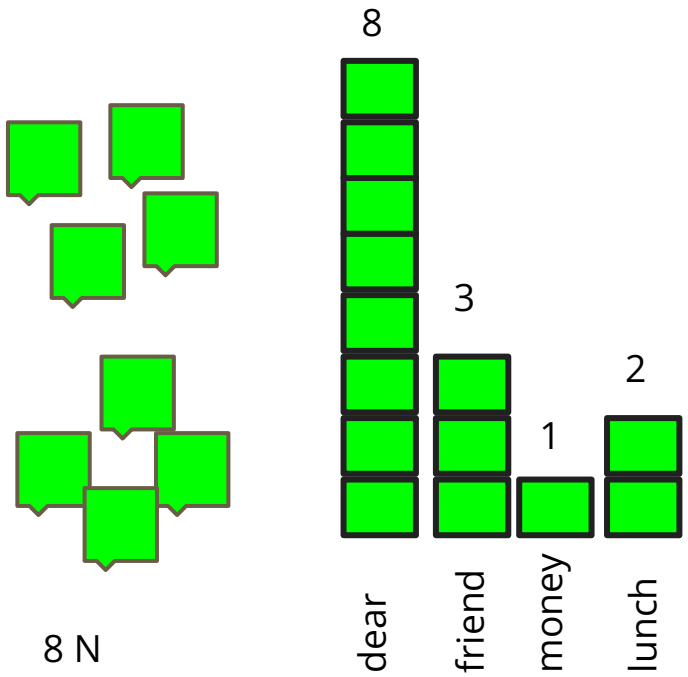


p(dear | N) = 8/14 = 0.57

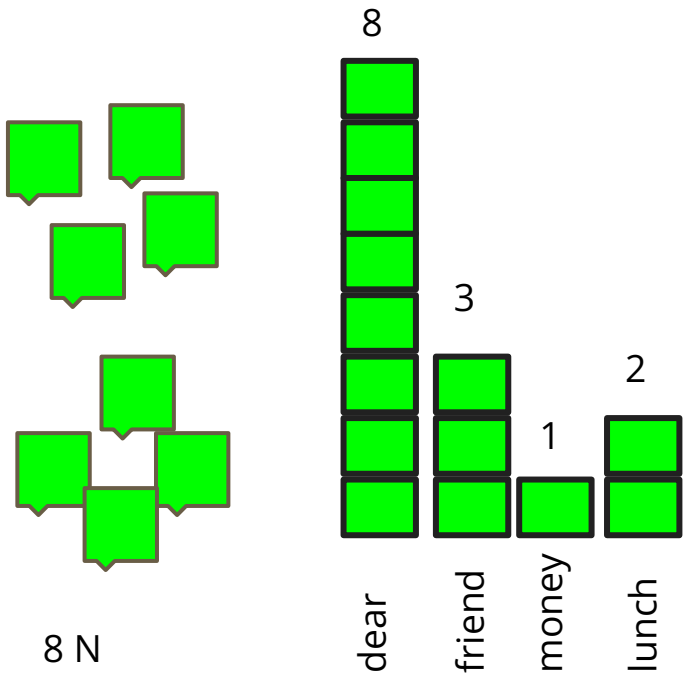
Modèle Naïve Bayes



p(dear | N) = 8/14 = 0.57

p(friend | N) = 3/14 = 0.21

Modèle Naïve Bayes



p(dear | N) = 8/14 = 0.57

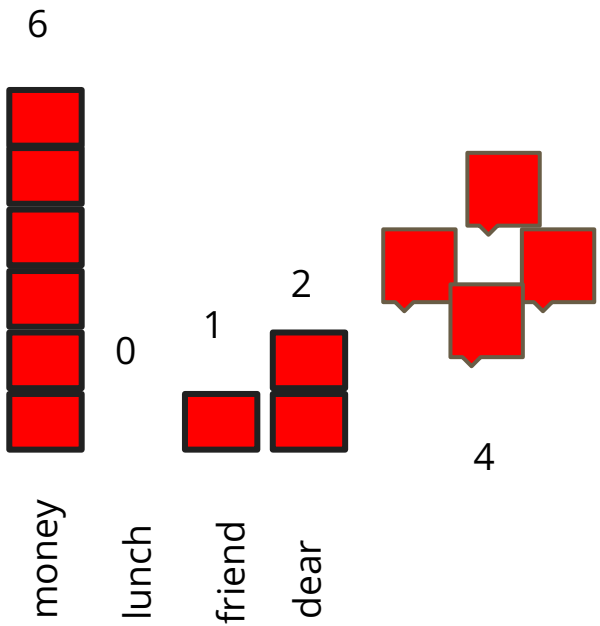
p(friend | N) = 3/14 = 0.21

p(money | N) = 0.07

p(lunch | N) = 0.14

Modèle Naïve Bayes

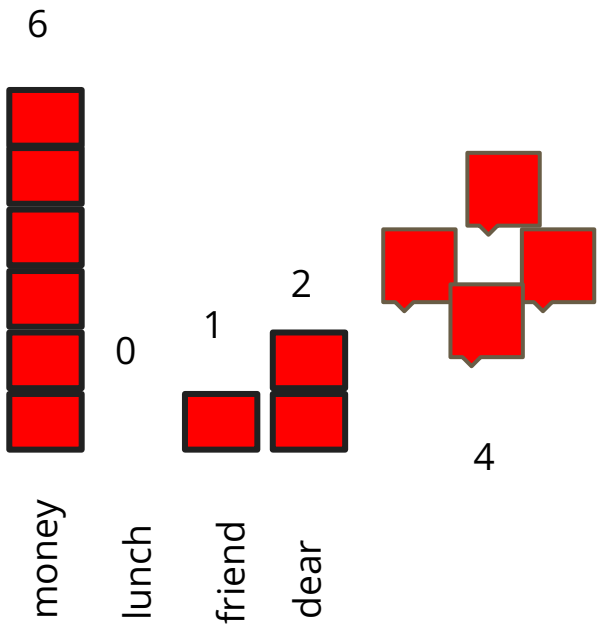
p(dear|S) = 0.22



Modèle Naïve Bayes

p(dear|S) = 0.22

p(friend| S) = 0.11



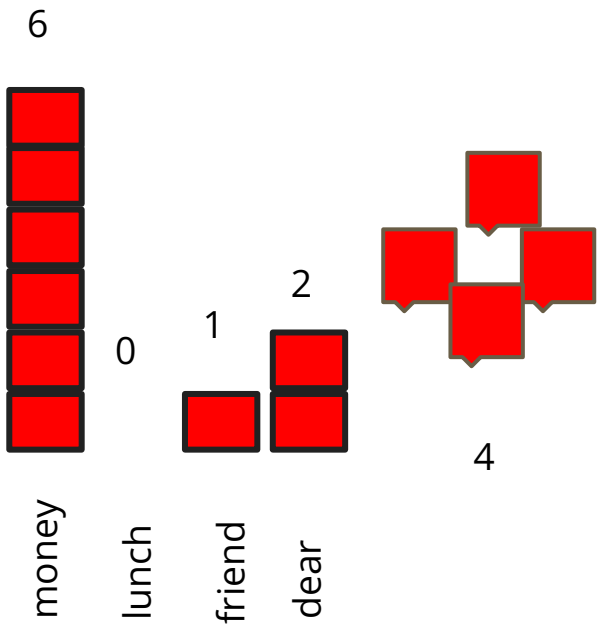
Modèle Naïve Bayes

p(dear|S) = 0.22

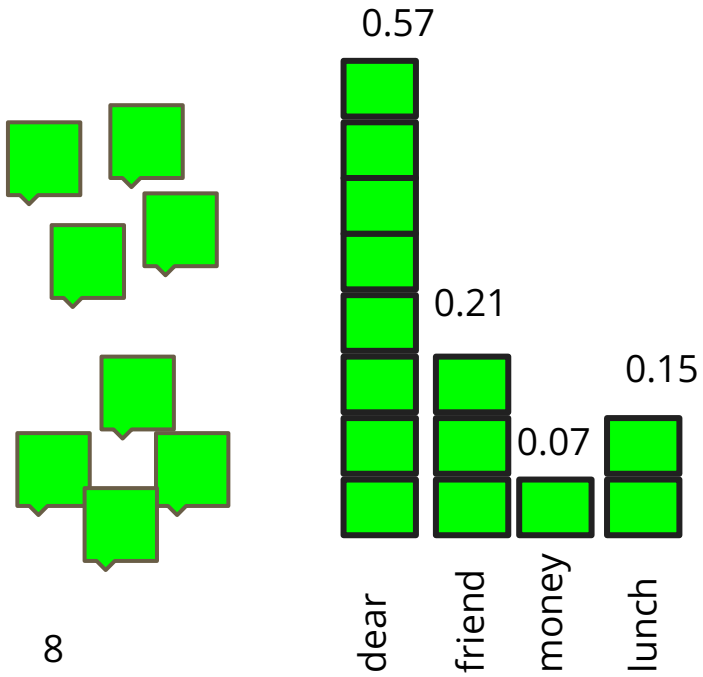
p(friend| S) = 0.11

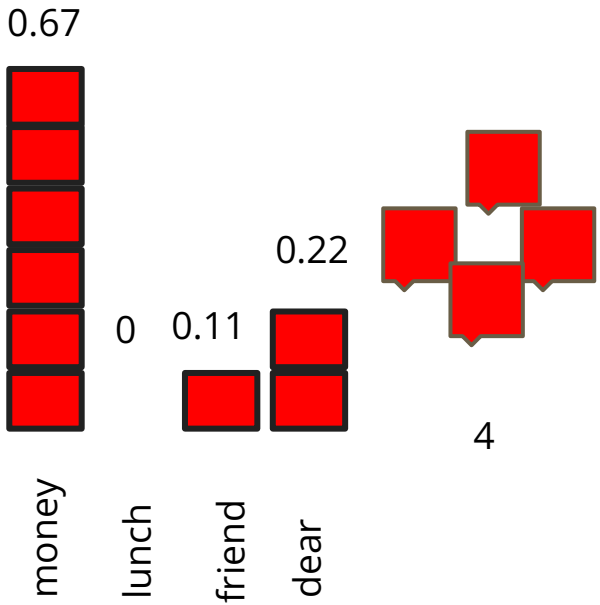
p(money| S) = 0.67

p(lunch| S) = 0

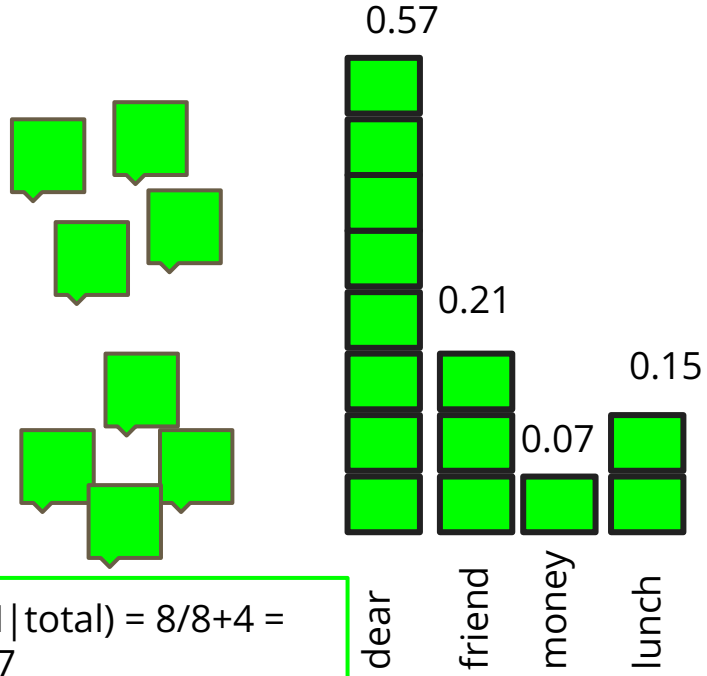


Modèle Naïve Bayes

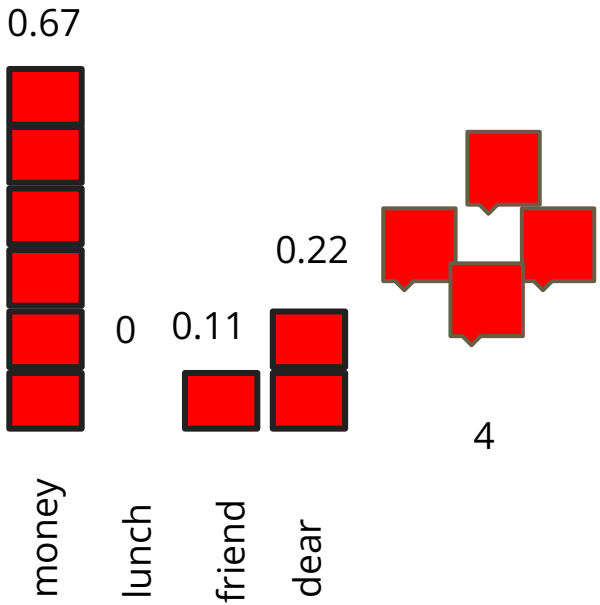




Modèle Naïve Bayes



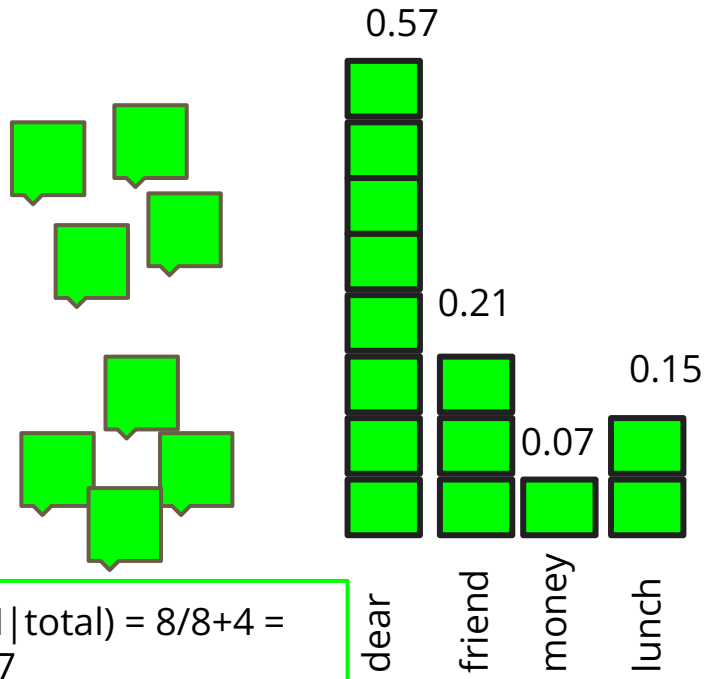
p(N|total) = 8/8+4 = 0.67



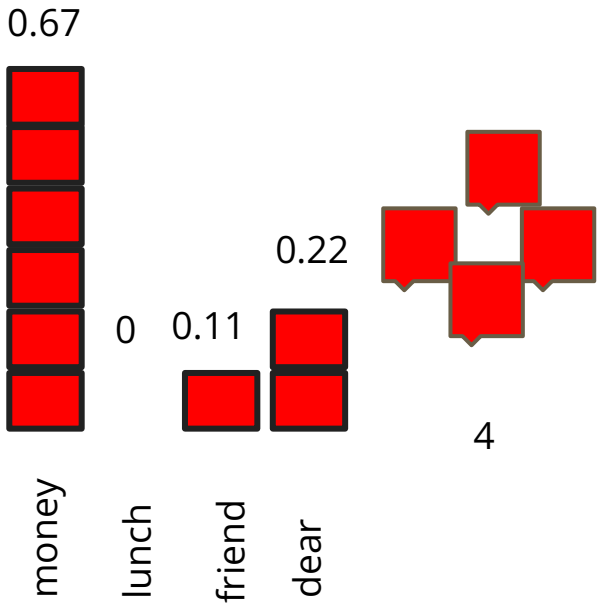
p(S) = 8/8+4 = 0.33

Modèle Naïve Bayes

Dear friend ?

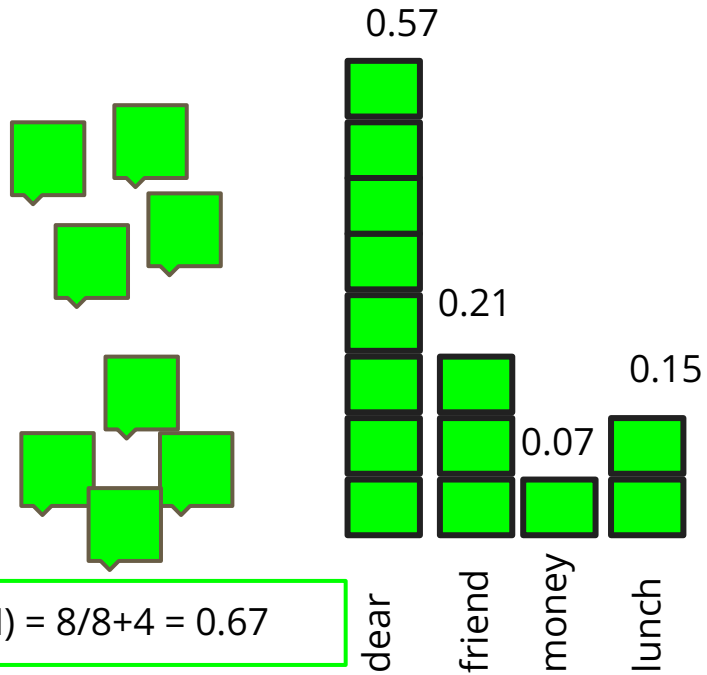


p(N|total) = 8/8+4 = 0.67



p(S) = 8/8+4 = 0.33

Modèle Naïve Bayes

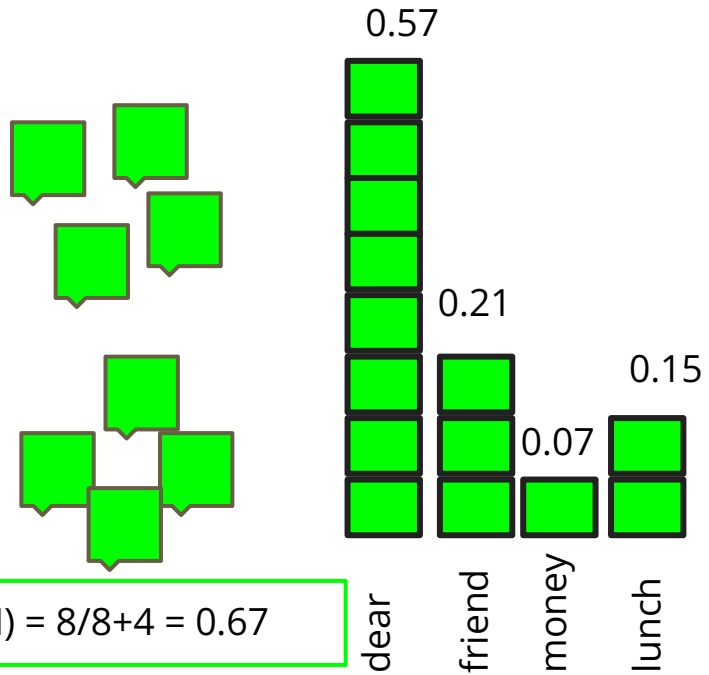


p(N) = 8/8+4 = 0.67

Dear friend

p(N) * p(Dear |N) * p(Friend|N)

Modèle Naïve Bayes



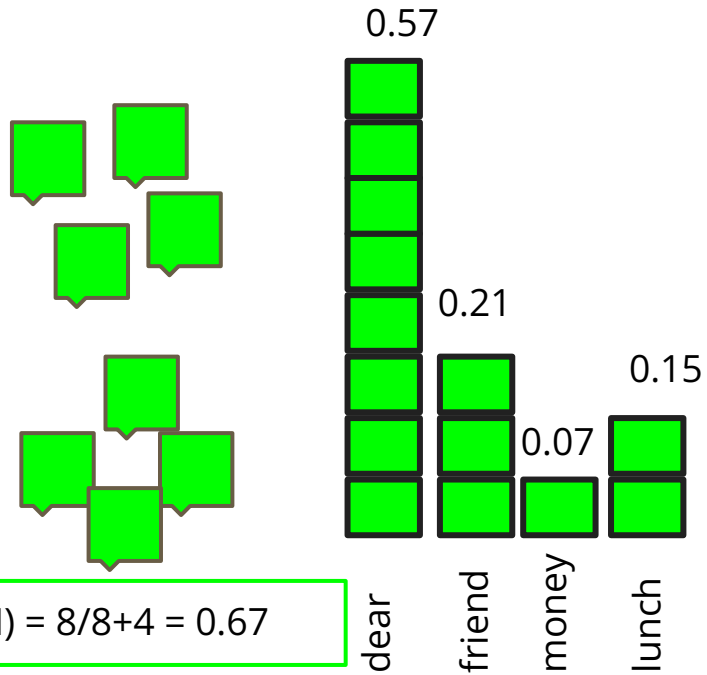
p(N) = 8/8+4 = 0.67

Dear friend

p(N) * p(Dear |N) * p(Friend|N)

0.67 * 0.57 * 0.21

Modèle Naïve Bayes



p(N) = 8/8+4 = 0.67

Dear friend

p(N) * p(Dear |N) * p(Friend|N)

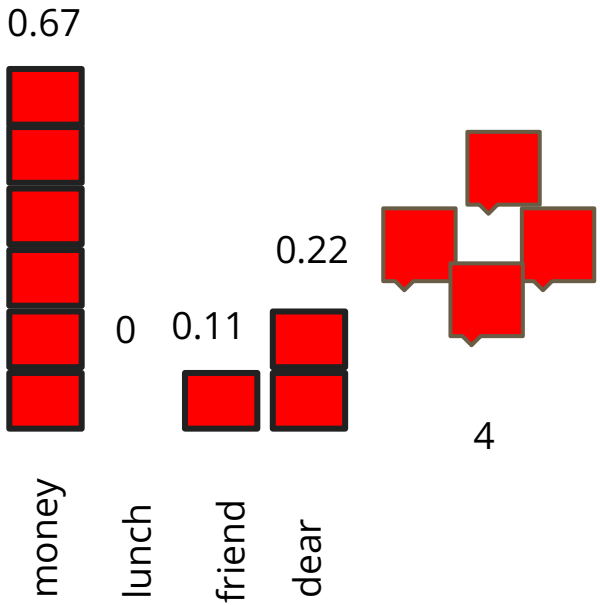
0.67 * 0.57 * 0.21

0.080

Modèle Naïve Bayes

Dear friend

p(S) * p(Dear |S) * p(Friend|S)



p(S) = 8/8+4 = 0.33

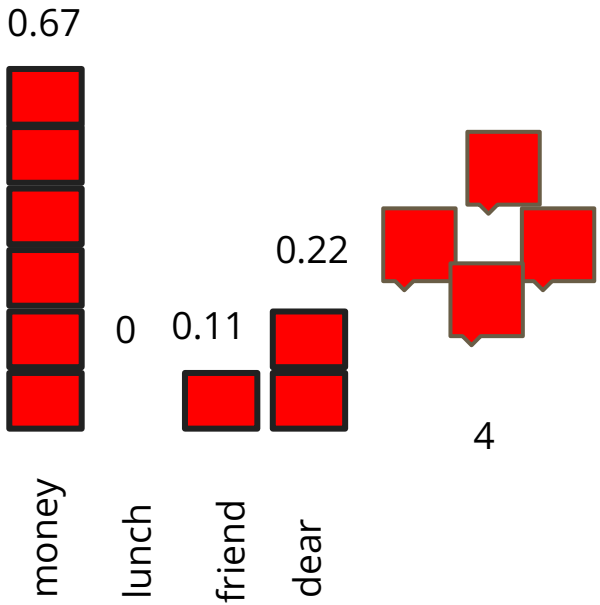
Modèle Naïve Bayes

Dear friend

p(S) * p(Dear |S) * p(Friend|S)

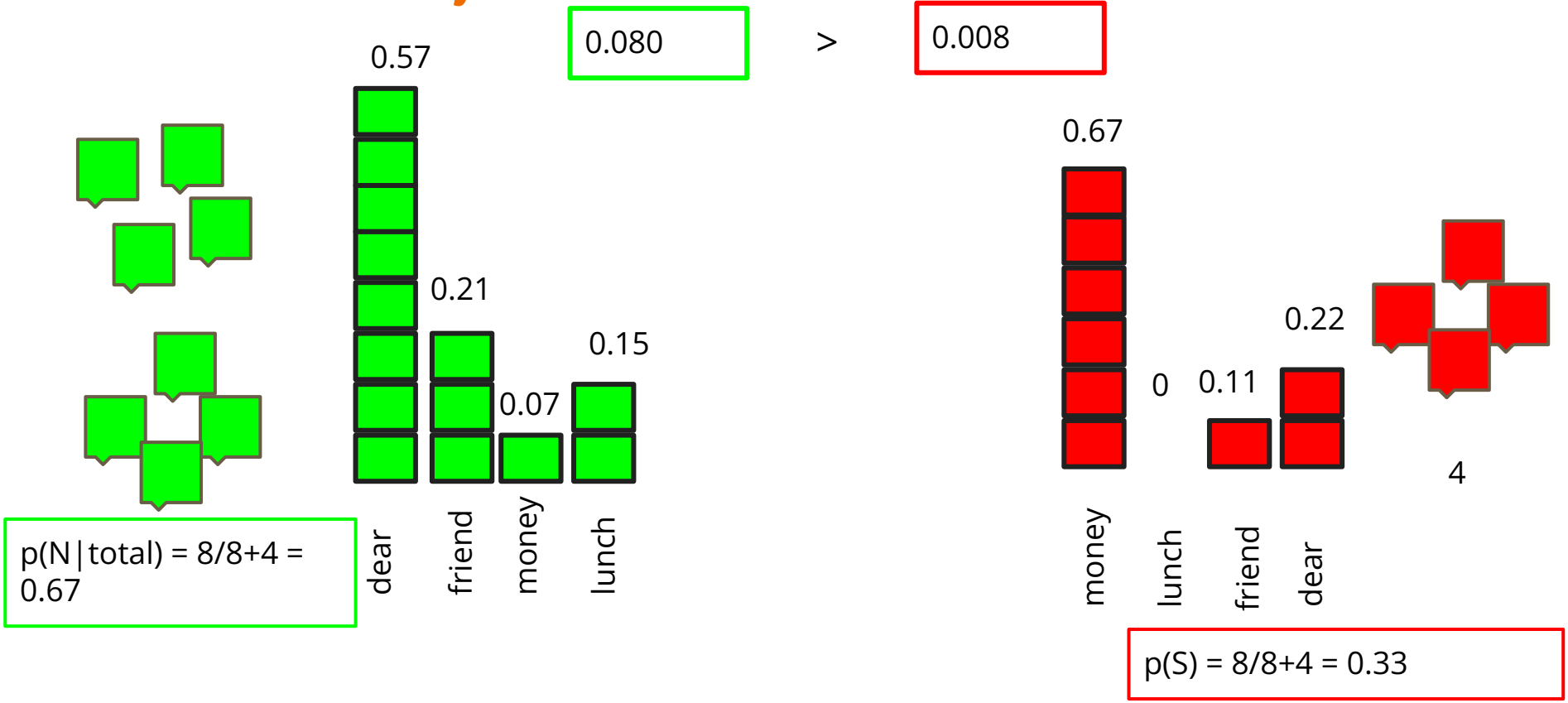
0.33 * 0.22 * 0.11

0.008



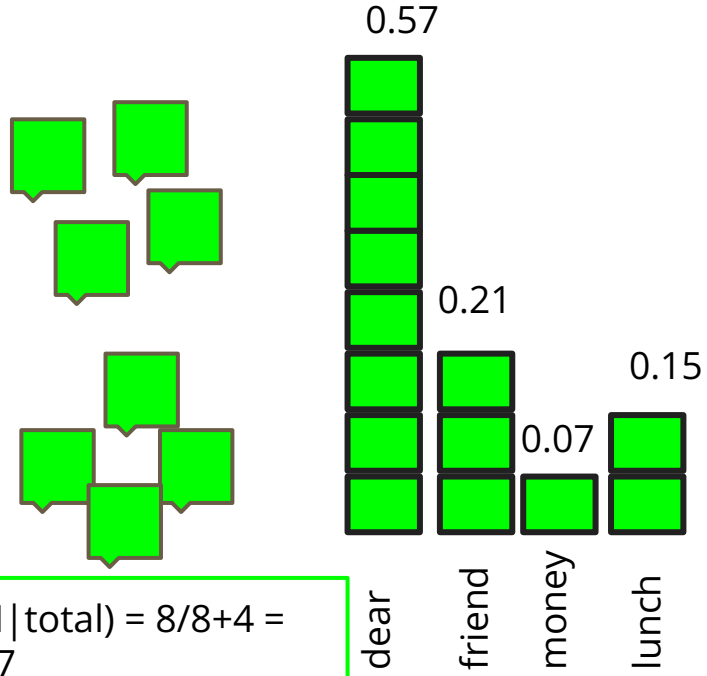
p(S) = 8/8+4 = 0.33

Modèle Naïve Bayes

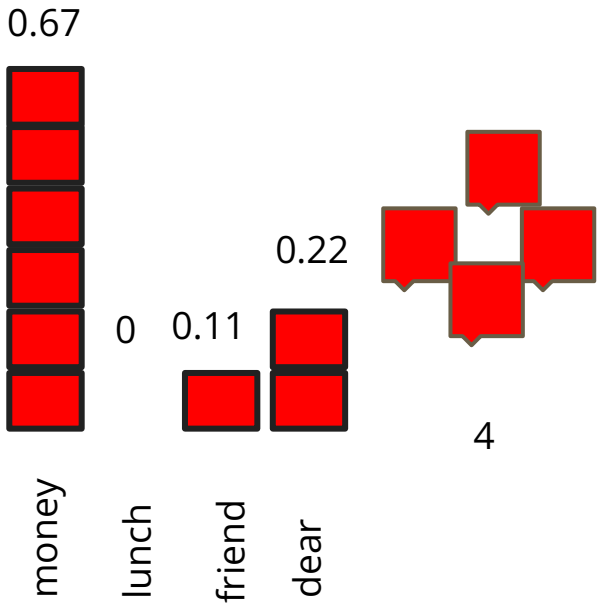


Modèle Naïve Bayes

Lunch money money money money ?

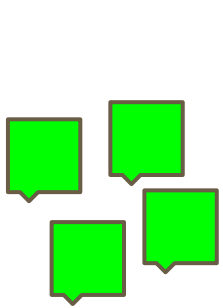


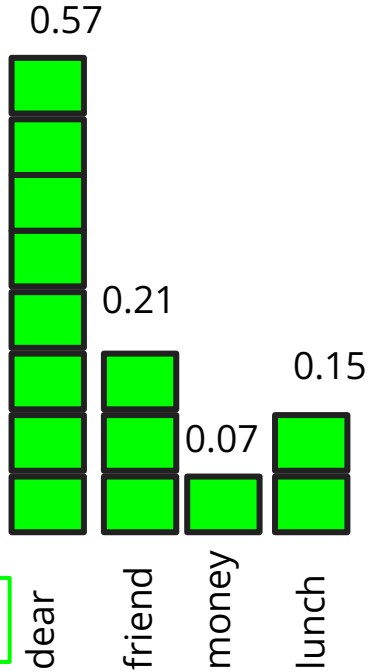
p(N|total) = 8/8+4 = 0.67



p(S) = 8/8+4 = 0.33

Modèle Naïve Bayes





p(N) = 8/8+4 = 0.67

Lunch money money money money ?

p(N) * p(lunch |N) * p(money|N)^4

0.67 * 0.15 * 0.07^4

0.00053

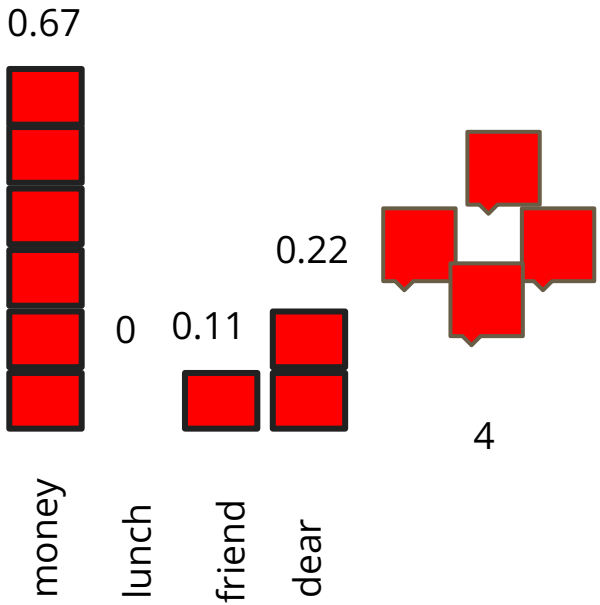
Modèle Naïve Bayes

Lunch money money money money ?

p(S) * p(lunch |S) * p(money|S) ^4

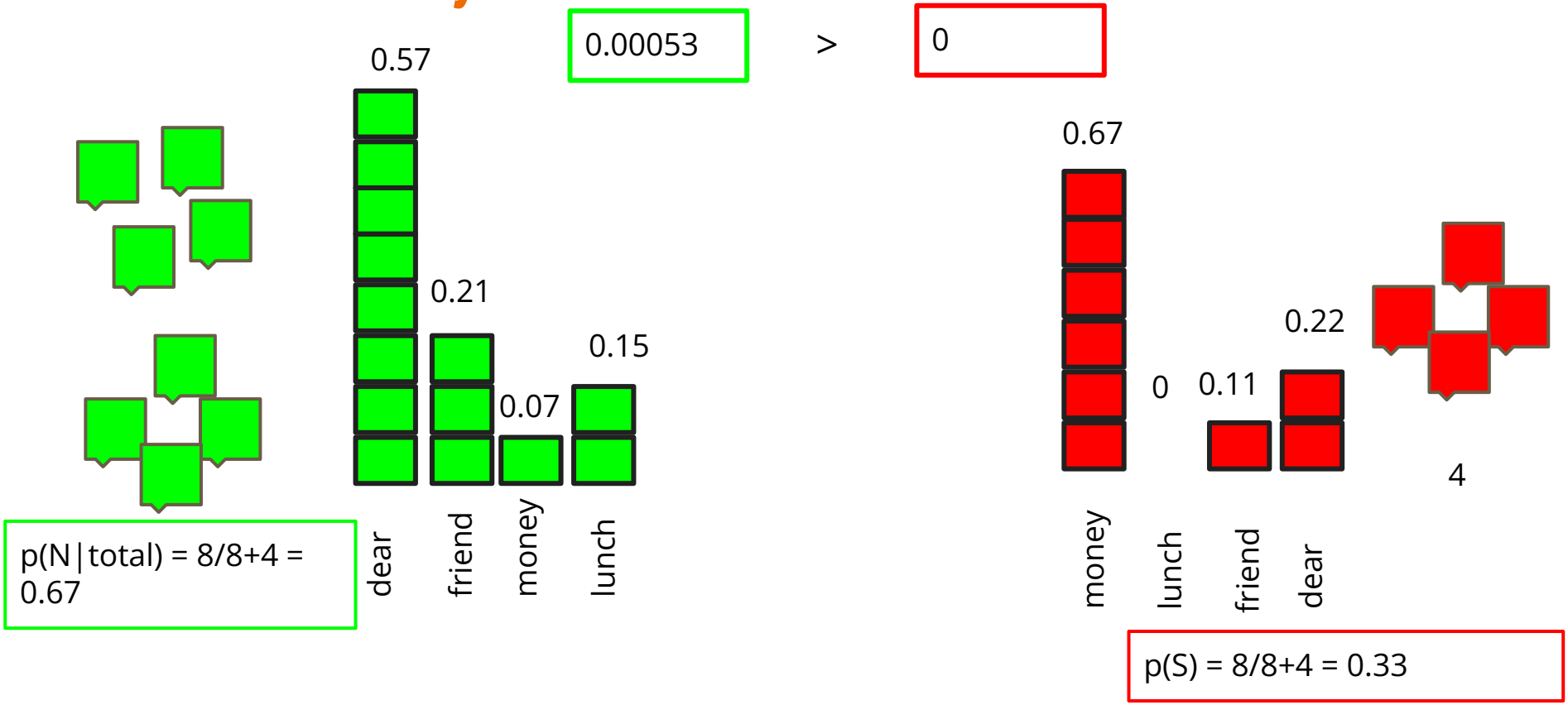
0.33 * 0 * 0.0053

0

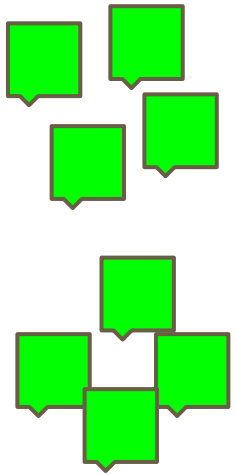


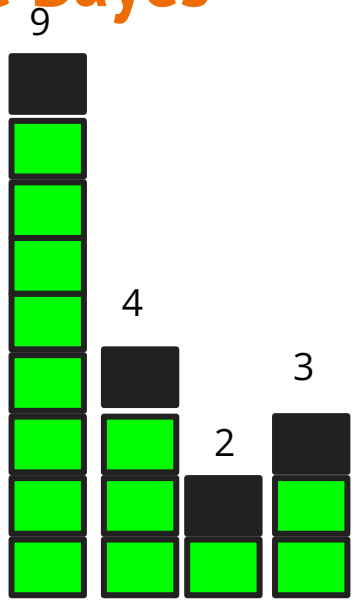
p(S) = 8/8+4 = 0.33

Modèle Naïve Bayes

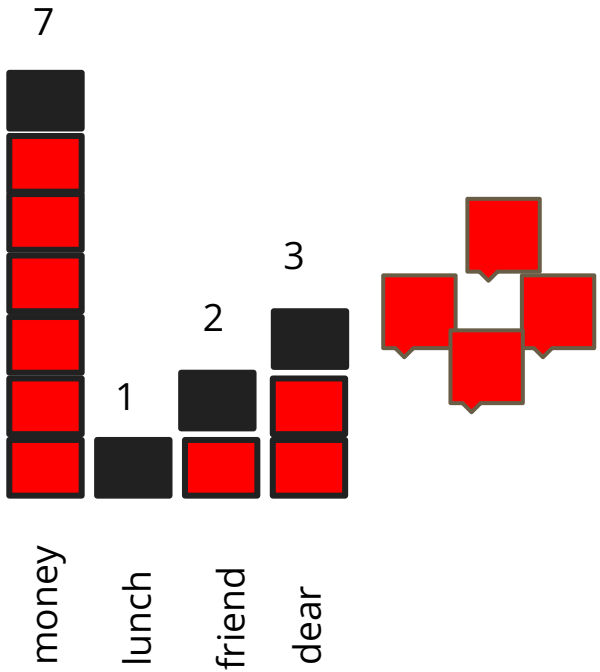


Modèle Naïve Bayes





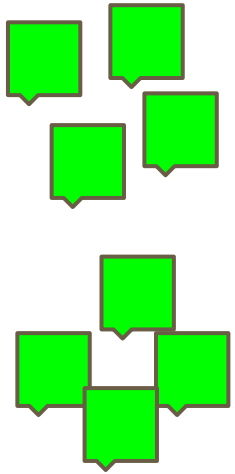
p(N | total) = 8/8+4 = 0.67

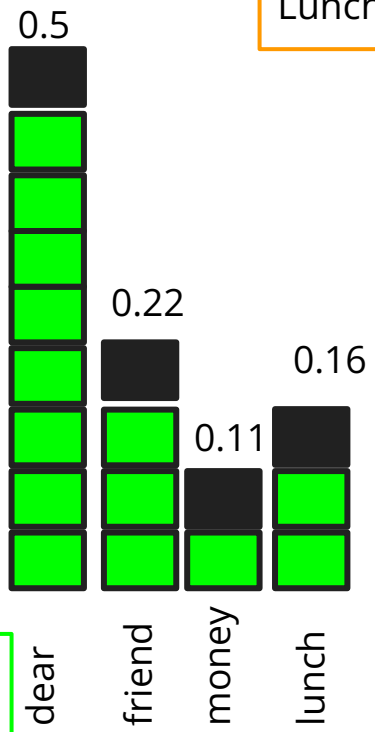


p(S) = 8/8+4 = 0.33

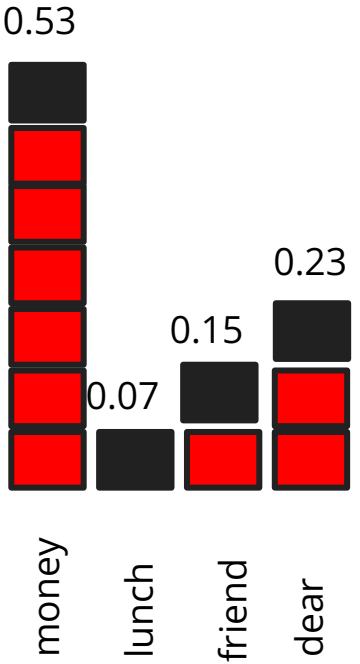
Modèle Naïve Bayes : Multinomial

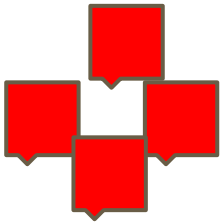
Lunch money money money money ?





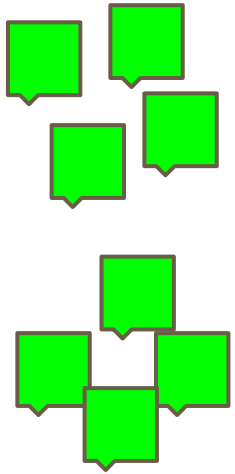
p(N|total) = 8/8+4 = 0.67

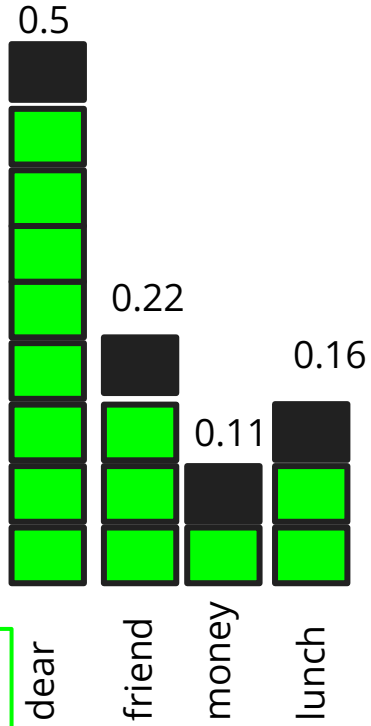




p(S) = 8/8+4 = 0.33

Modèle Naïve Bayes : Multinomial





p(N|total) = 8/8+4 = 0.67

Lunch money money money money ?

p(N) * p(lunch |N) * p(money|N)^4

0.67 * 0.16 * 0.11^4

0.000015

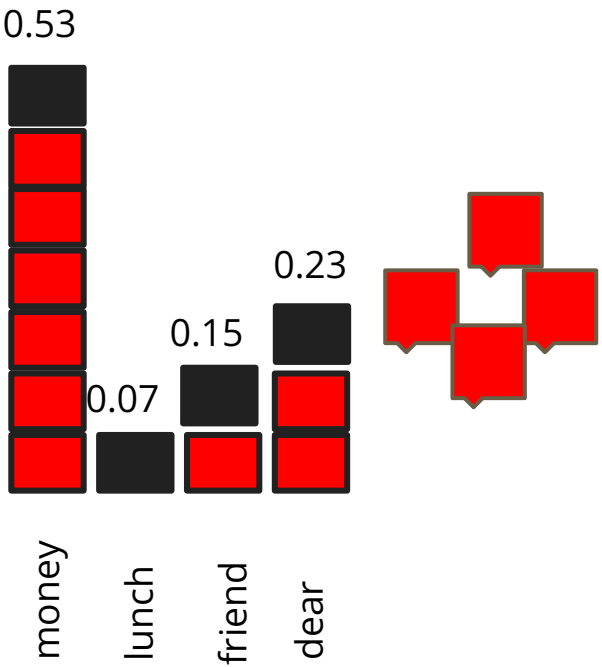
Modèle Naïve Bayes : Multinomial

Lunch money money money money ?

p(S) * p(lunch |S) * p(money|S) ^4

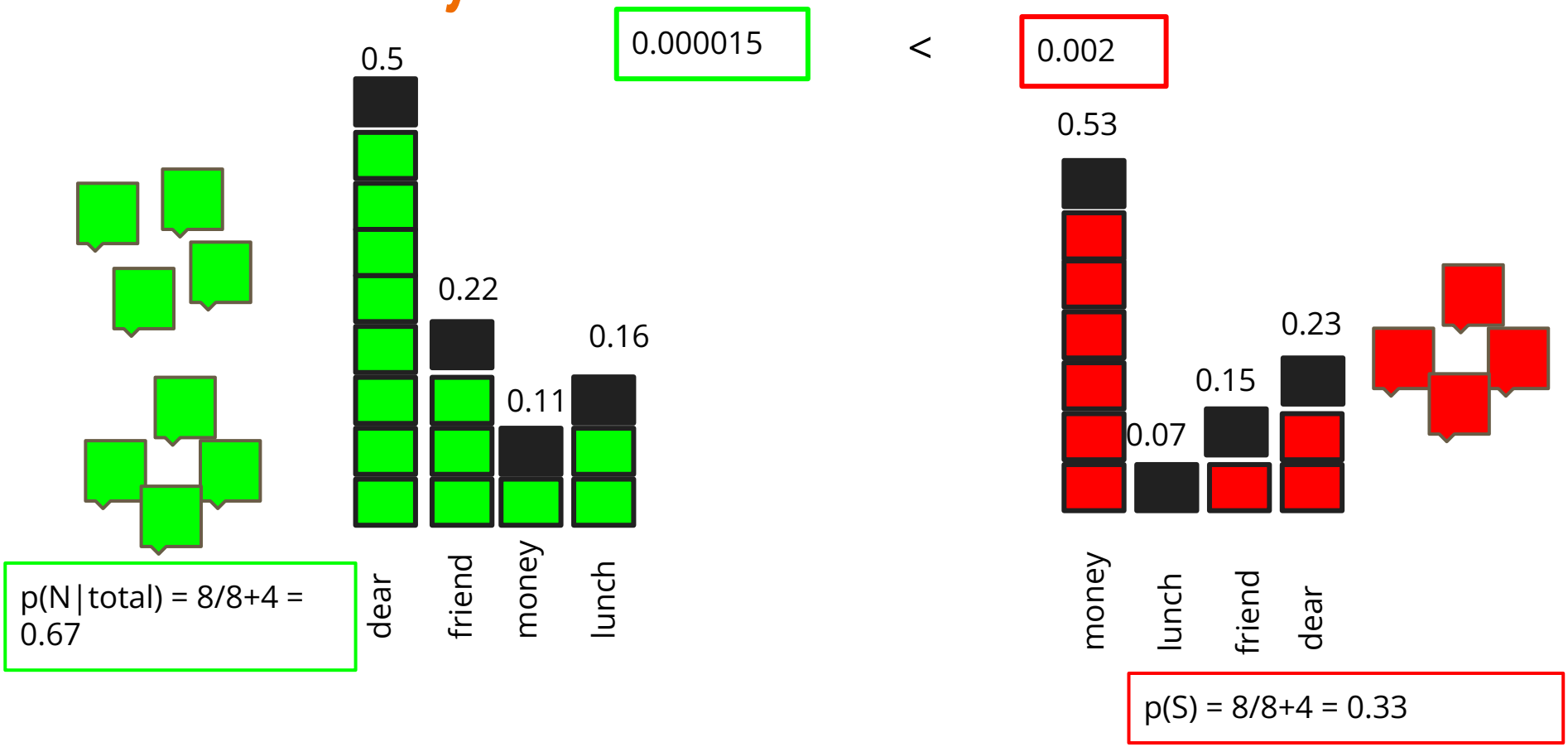
0.33 * 0.07 * (0.53)^4

0.002



p(S) = 8/8+4 = 0.33

Modèle Naïve Bayes : Multinomial



Exemple tiré de StatQuest :
https://www.youtube.com/channel/UCtYLUTtgS3k1Fg4y5tAhLbw