Comment on Remembering the Multiplication Rule

From the book and the video, the multiplication rule (Remark 5.16) is

 $P(A_1 \cap A_2 \cap \cdots \cap A_n) = P(A_1) P(A_2 \mid A_1) P(A_3 \mid A_1 \cap A_2) \cdots P(A_n \mid A_1 \cap A_2 \cap \cdots \cap A_{n-1})$

But how do you remember this formula?

Term 1 is the probability of the first element. Term 2 is the probability of the second element given the first element. Term 3 is the probability of the third element given the first two.

Term n is the probability of the n^{th} element given the previous n - 1.