

Prof Copper's argument:

$\text{Prob}[1^{\text{st}} \text{ name is Muhammed AND surname is Li}]$

$= \text{Prob}[1^{\text{st}} \text{ name is Muhammed}] \times \text{Prob}[\text{surname is Li}]$

The correct argument:

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$\text{Prob}[1^{\text{st}} \text{ name is Muhammed AND surname is Li}]$

$= \text{Prob}[\text{surname is Li}]$

$\times \text{Prob}[1^{\text{st}} \text{ name is Muhammed} \mid \text{surname is Li}]$

$\text{Prob}[A \text{ and } B] = \text{Prob}[A \mid B] * \text{Prob}[B]$

$= \text{Prob}[B \mid A] * \text{Prob}[A]$

If A and B are two independent events,

$\text{Prob}[A \text{ and } B] = \text{Prob}[A] * \text{Prob}[B]$

