Quiz 8

กำหนดให้

Age 31-40 , income = high, stu = yes , fair

- $P(C_i) = P(\text{buy\_computer} = \text{"yes"}) = 9/14 = 0.643$

  $P(\text{buys\_computer} = \text{"no"}) = 5/14 = 0.357$

- Compute $P(X|C_i)$ for each class

  $P(\text{age} = \text{"31-40"} \mid \text{buys\_computer} = \text{"yes"}) = 4/9 = 0.444 \rightarrow \frac{5}{12} = \sout{0.455}$ 0.417

  $P(\text{age} = \text{"31-40"} \mid \text{buys\_computer} = \text{"no"}) = 0 \rightarrow \frac{1}{8} = \sout{0.143} = 0.125$

  $P(\text{income} = \text{"high"} \mid \text{buys\_computer} = \text{"yes"}) = 2/9 = 0.222$

  $P(\text{income} = \text{"high"} \mid \text{buys\_computer} = \text{"no"}) = 2/5 = 0.4$

  $P(\text{student} = \text{"yes"} \mid \text{buys\_computer} = \text{"yes"}) = 6/9 = 0.667$

  $P(\text{student} = \text{"yes"} \mid \text{buys\_computer} = \text{"no"}) = 1/5 = 0.2$

  $P(\text{credit\_rating} = \text{"fair"} \mid \text{buys\_computer} = \text{"yes"}) = 6/9 = 0.667$

  $P(\text{credit\_rating} = \text{"fair"} \mid \text{buys\_computer} = \text{"no"}) = 2/5 = 0.4$

$P(X|C_i) = P(X \mid \text{buys\_computer} = \text{"yes"}) = 0.455 \times 0.222 \times 0.667 \times 0.667 = 0.045$

$P(X \mid \text{buys\_computer} = \text{"no"}) = 0.143 \times 0.4 \times 0.2 \times 0.4 = 0.002$

$P(X|C_i) * P(C_i) : P(X \mid \text{buys\_computer} = \text{"yes"}) * P(X \mid \text{buys\_computer} = \text{"yes"})$

$= 0.045 \times 0.643 = 0.029$

$P(X \mid \text{buys\_computer} = \text{"no"}) * P(X \mid \text{buys\_computer} = \text{"no"})$

$= 0.002 \times 0.357 = 0.001$

"yes"

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