• Quiz

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

• $P(C_i)$: $P(buy\_computer = "yes") = \frac{9}{14} = 0.643$

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

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

$P(age = "31-40" \mid buys\_computer = "yes") = \frac{4}{9} = 0.444 \rightarrow \frac{5}{11} = 0.455$

$P(age = "31-40" \mid buys\_computer = "no") = 0 \rightarrow \frac{1}{7} = 0.143$

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

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

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

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

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

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

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

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

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

$= 0.045 \times 0.643 = 0.029$

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

$= 0.002 \times 0.357 = 0.001$

"yes"