

Quiz 8

Input : Age : 31-40, income = High, student : yes, Credit-card : fair

$$P(C_i) : P(\text{buys-computer} = \text{"yes"}) = 9/14 = 0.643$$

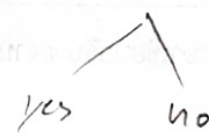
$$P(\text{buys-computer} = \text{"no"}) = 5/14 = 0.357$$

$P(x|C_i)$ for each class

- $P(\text{age} = \text{"31-40"} | \text{yes}) = \frac{4}{9} = 0.444$
- $P(\text{age} = \text{"31-40"} | \text{no}) = \frac{1}{7} = 0.143$
- $P(\text{income} = \text{high} | \text{yes}) = \frac{2}{9} = 0.222$
- $P(\text{income} = \text{high} | \text{no}) = \frac{2}{5} = 0.4$
- $P(\text{student} | \text{yes}) = \frac{6}{9} = 0.667$
- $P(\text{student} | \text{no}) = \frac{1}{5} = 0.2$
- $P(\text{fair} | \text{yes}) = \frac{6}{9} = 0.667$
- $P(\text{fair} | \text{no}) = \frac{2}{5} = 0.4$

+ 1 feature

+ 2 : Prob(age "31-40")



$\Rightarrow x = \text{Input}$

$$P(x|C_i) : P(x | \text{buy-com} = \text{"yes"}) = 0.444 \times 0.222 \times 0.667 \times 0.667 = 0.0438$$

$$P(x | \text{buy-com} = \text{"no"}) = 0.143 \times 0.4 \times 0.2 \times 0.4 = 0.0046$$

$$P(x|C_i) \cdot P(C_i) : P(x | \text{buy-com} = \text{"yes"}) \cdot P(\text{buy-com} = \text{"yes"}) \quad \text{--- (1)}$$

$$: P(x | \text{buy-com} = \text{"no"}) \cdot P(\text{buy-com} = \text{"no"}) \quad \text{--- (2)}$$

$$(1) : 0.0438 \times 0.643 = 0.0282, (2) : 0.0046 \times 0.357 = 0.0016$$

• Input / x belong to class (buys-computer: "yes")

หรือ Input 0.0282 > 0.0016