NB Quiz

Due No due date **Points** 3 **Questions** 3
Available after Mar 19 at 16:05 **Time Limit** None
Allowed Attempts Unlimited

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Attempt History

	Attempt	Time	Score
LATEST	Attempt 1	less than 1 minute	0 out of 3

Submitted Mar 23 at 18:53

Question 1

0 / 1 pts

Why do we say that the Naïve Bayes classifier is "naïve"?

ou Answered

- (•) Because it is based on Bayes' rule

- ( ) Because the model is very simple and easy for explanation

orrect Answer

- ( ) Because it assumes that the attributes are conditionally independent

The most important assumption of Naïve Bayes is that given a class value the attributes are irrelevant to each other. This is a naïve assumption, because it is not true for almost every realistic machine learning problem.

Question 2

0 / 1 pts

For the following dataset:

ID	Outl	Temp	Humi	Wind	Play
A	s	h	n	F	N
B	o	h	h	F	Y
C	s	m	n	T	Y
D	s	m	h	F	Y

What is the label for the test instance of {Outl=r, Temp=c, Humi=l, Wind=?} using the epsilon smoothing method.

orrect Answer

- Play=Y

- We need to use Laplace smoothing

ou Answered

- Play=N

- We cannot classify this instance by Naïve Bayes classifier because we don't have enough training data

By ignoring the unknown value for Wind we have:

For Play=N: $=\frac{1}{4} * \varepsilon * \varepsilon * \varepsilon = \frac{1}{4}\varepsilon^3$

For Play=Y: $=\frac{3}{4} * \varepsilon * \varepsilon * \varepsilon = \frac{3}{4}\varepsilon^3$

Since the number of ε is the same, so by ignoring them, the test instance classifies as Y.

Question 3

0 / 1 pts

What sentence is wrong about NB classification?

- NB is robust to irrelevant features
- ou Answered — We don't need a true distribution over P(y|x)
- orrect Answer — The model is too easy to use in real-world application.
- We can build the NB model if there are missing values in the training dataset

Naïve Bayes classifier works well in spite of its massive simplification.