Congratulations! You passed!

Naïve Bayes Classification Quiz

Grade received 100%

Latest Submission Grade 100%

To pass 60% or higher

Go to next item

Review Learning Objectives

Submit your assignment

Due Feb 25, 11:59 PM IST

Receive grade

To Pass 60% or higher

Try again

Your grade 100%

View Feedback

We keep your highest score

Like **Dislike** **Report an issue**

1. What is the fundamental idea behind Bayes Theorem in classification? **1 / 1 point**

- ○ Bayes Theorem is used to compute the likelihood of an event occurring in a given dataset.
- ○ Bayes Theorem is used to measure the strength of the relationship between two variables in a dataset.
- ◉ Bayes Theorem is used to update the probability of a hypothesis based on new evidence or observations.
- ○ Bayes Theorem is used to calculate the expected value of a random variable in a given dataset.

Correct
Correct! Bayes Theorem is used to update the probability of a hypothesis (posterior probability) based on new evidence or observations, given the prior probability.

2. What are prior probabilities in the context of Bayes Theorem? **1 / 1 point**

- ○ Prior probabilities are the probabilities of an event occurring after new evidence is observed.
- ◉ Prior probabilities are the probabilities assigned to events before any new evidence is observed.
- ○ Prior probabilities are the probabilities of an event occurring without considering any evidence.
- ○ Prior probabilities are the probabilities of an event occurring when the evidence is uncertain.

Correct
Correct! Prior probabilities represent the initial beliefs about the likelihood of events before any new evidence is observed.

3. What are posterior probabilities in the context of Bayes Theorem? **1 / 1 point**

- ○ Posterior probabilities are the probabilities of an event occurring without considering any evidence.
- ○ Posterior probabilities are the probabilities assigned to events before any new evidence is observed.
- ◉ Posterior probabilities are the probabilities of an event occurring after new evidence is observed.
- ○ Posterior probabilities are the probabilities of an event occurring when the evidence is uncertain.

Correct
Correct! Posterior probabilities represent the updated probabilities of events after new evidence is observed, given the prior probabilities.

4. What is the Naive assumption in Naive Bayes? **1 / 1 point**

- ○ The Naive assumption assumes that all features are equally important in the classification process.
- ○ The Naive assumption assumes that the prior probabilities are equal for all class labels.
- ○ The Naive assumption assumes that features are linearly related to the class label.
- ◉ The Naive assumption assumes that features are conditionally independent given the class label.

Correct
Correct! The Naive assumption in Naive Bayes assumes that features are conditionally independent given the class label, which simplifies the calculation of posterior probabilities.

5. What is the main advantage of the Naive Bayes classifier? **1 / 1 point**

- ◉ Naive Bayes is computationally efficient and requires a small amount of training data to estimate probabilities.
- ○ Naive Bayes can handle non-linear relationships between features and the class label.
- ○ Naive Bayes can handle missing values in the dataset without any preprocessing.
- ○ Naive Bayes is robust to outliers in the dataset and can automatically identify and handle them.

Correct
Correct! Naive Bayes is computationally efficient and requires a small amount of training data to estimate probabilities, making it well-suited for large datasets.

6. How can you create a Gaussian Naive Bayes classifier using Scikit-learn in Python? **1 / 1 point**

- ◉ By importing the "GaussianNB" class and calling the "fit" method with the training data.
- ○ By importing the "MultinomialNB" class and calling the "fit" method with the training data.
- ○ By importing the "BernoulliNB" class and calling the "fit" method with the training data.
- ○ By importing the "GaussianNBClassifier" class and calling the "fit" method with the training data.

Correct
Correct! You can create a Gaussian Naive Bayes classifier using Scikit-learn by importing the "GaussianNB" class and calling the "fit" method with the training data.

7. In Naive Bayes, what does the "prior" probability represent? **1 / 1 point**

- ○ The probability of a feature occurring in the dataset.
- ◉ The probability of each class label occurring in the dataset before any new evidence is observed.
- ○ The probability of a feature occurring given a specific class label.
- ○ The probability of a feature occurring after new evidence is observed.

Correct
Correct! The "prior" probability represents the probability of each class label occurring in the dataset before any new evidence is observed.

8. In Naive Bayes, what does the "posterior" probability represent? **1 / 1 point**

- ○ The probability of a feature occurring in the dataset.
- ○ The probability of each class label occurring in the dataset before any new evidence is observed.
- ◉ The probability of each class label occurring in the dataset after new evidence is observed.
- ○ The probability of a feature occurring after new evidence is observed.

Correct
Correct! The "posterior" probability represents the probability of each class label occurring in the dataset after new evidence is observed, given the prior probabilities.

9. In Naive Bayes, how are the probabilities of individual features combined to make predictions? **1 / 1 point**

- ○ The probabilities of individual features are added together to make predictions.
- ○ The probabilities of individual features are averaged to make predictions.
- ◉ The probabilities of individual features are multiplied together to make predictions, assuming that features are conditionally independent given the class label.
- ○ The probabilities of individual features are weighted based on their importance to make predictions.

Correct
Correct! In Naive Bayes, the probabilities of individual features are multiplied together under the assumption that features are conditionally independent given the class label.