

# Day-14 Quiz-DataScience-Training

Welcome to the Python Programming Quiz! This quiz tests your knowledge of daily learnings. Please read the instructions carefully before starting the quiz.

## Instructions and Rules

- **Time Limit:** You have 20 minutes to complete the quiz.
- **Number of Questions:** The quiz consists of 20 multiple-choice questions.
- **Scoring:** Each correct answer is worth 1 point. There is no negative marking for incorrect answers.
- **Single Attempt:** You are allowed only one attempt to complete the quiz.
- **Required Fields:** All questions are mandatory. You must answer each question to submit the quiz.
- **Resources:** This is a closed-book quiz. Do not use any external resources, including books, notes, or the internet.
- **Honesty:** Please answer the questions honestly and to the best of your ability. Cheating or dishonesty will result in disqualification.
- **Environment:** Ensure you are in a quiet environment where you can concentrate without interruptions.
- **Technical Issues:** In case of technical issues, please contact the quiz administrator immediately.
- **Retakes:** There are no retake opportunities for this quiz. Ensure you are prepared before starting.

**Good luck, and do your best!**

\* Indicates required question

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1. Email \*

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2. **1. Which of the following is the main assumption behind Naive Bayes? \***

*Mark only one oval.*

- ☐ a) All features are independent of each other
- ☐ b) All features are dependent on each other
- ☐ c) Only some features are independent
- ☐ d) None of the above

3. **2. Naive Bayes is best suited for which type of problems? \***

*Mark only one oval.*

- ☐ a) Regression
- ☐ b) Classification
- ☐ c) Clustering
- ☐ d) Dimensionality reduction

4. **3. What does the term 'naive' refer to in Naive Bayes? \***

*Mark only one oval.*

- ☐ a) The algorithm is simple
- ☐ b) The algorithm is fast
- ☐ c) The algorithm is outdated
- ☐ d) The algorithm assumes independence among features

5. **4. Which of the following is not a type of Naive Bayes model? \***

*Mark only one oval.*

- ☐ a) Gaussian Naive Bayes
- ☐ b) Multinomial Naive Bayes
- ☐ c) Bernoulli Naive Bayes
- ☐ d) Logistic Naive Bayes

6. **5. In Gaussian Naive Bayes, how is the likelihood of the features calculated? \***

*Mark only one oval.*

- ☐ a) Using a Gaussian distribution
- ☐ b) Using a Poisson distribution
- ☐ c) Using a uniform distribution
- ☐ d) Using a binomial distribution

7. **6. What is the main application of Multinomial Naive Bayes? \***

*Mark only one oval.*

- ☐ a) Binary classification
- ☐ b) Multiclass classification
- ☐ c) Text classification
- ☐ d) Image classification

8. **7. Which Naive Bayes variant is best suited for binary/boolean features? \***

*Mark only one oval.*

- ☐ a) Gaussian Naive Bayes
- ☐ b) Multinomial Naive Bayes
- ☐ c) Bernoulli Naive Bayes
- ☐ d) Poisson Naive Bayes

9. **8. Bayes' theorem helps us calculate which probability? \***

*Mark only one oval.*

- ☐ a) Joint probability
- ☐ b) Prior probability
- ☐ c) Posterior probability
- ☐ d) Conditional probability

10. **9. In Naive Bayes, how do we compute the posterior probability? \***

*Mark only one oval.*

- ☐ a) Using the sum of probabilities
- ☐ b) Using the product of prior and likelihood
- ☐ c) Using the difference of probabilities
- ☐ d) Using the division of prior and likelihood

11. **10. Which model is preferred for document classification? \***

*Mark only one oval.*

- ☐ a) Gaussian Naive Bayes
- ☐ b) Multinomial Naive Bayes
- ☐ c) Bernoulli Naive Bayes
- ☐ d) Poisson Naive Bayes

12. **11. What is the purpose of a Count Vectorizer in text processing? \***

*Mark only one oval.*

- ☐ a) To transform text into a numerical format
- ☐ b) To count the number of documents
- ☐ c) To vectorize images
- ☐ d) To extract numerical features from images

13. **12. How does the Count Vectorizer handle text data? \***

*Mark only one oval.*

- ☐ a) It converts each word into a unique number
- ☐ b) It converts each word into a binary value
- ☐ c) It converts each word into a count of occurrences
- ☐ d) It converts each word into a probability

14. **13. Which algorithm is commonly used for spam detection? \***

*Mark only one oval.*

- ☐ a) K-Means
- ☐ b) SVM
- ☐ c) KNN
- ☐ d) Naive Bayes

15. **14. What is the main goal of K-Means clustering? \***

*Mark only one oval.*

- ☐ a) To maximize the distance between clusters
- ☐ b) To minimize the distance between clusters
- ☐ c) To find the optimal number of clusters
- ☐ d) To maximize the similarity within clusters



16. **15. What is the Elbow Method used for in K-Means clustering? \***

*Mark only one oval.*

- ☐ a) To find the optimal number of features
- ☐ b) To find the optimal number of clusters
- ☐ c) To find the optimal number of iterations
- ☐ d) To find the optimal number of data points

17. **16. How do you determine the optimum number of clusters using the Elbow Method? \***

*Mark only one oval.*

- ☐ a) By finding the maximum value on the plot
- ☐ b) By finding the minimum value on the plot
- ☐ c) By finding the point where the plot bends sharply
- ☐ d) By finding the average value on the plot

18. **17. Which metric is commonly used to evaluate K-Means clustering? \***

*Mark only one oval.*

- ☐ a) Silhouette Score
- ☐ b) R-squared
- ☐ c) Mean Squared Error
- ☐ d) Precision

19. **18. How is the prior probability estimated in Naive Bayes? \***

*Mark only one oval.*

- ☐ a) From the training data
- ☐ b) From the test data
- ☐ c) Using a uniform distribution
- ☐ d) Using random sampling

20. **19. What does inertia represent in K-Means clustering? \***

*Mark only one oval.*

- ☐ a) The number of iterations taken to converge
- ☐ b) The distance between cluster centers
- ☐ c) The number of clusters
- ☐ d) The sum of squared distances of samples to their closest cluster center

21. **20. What is the difference between prior and posterior probabilities in Naive Bayes? \***

*Mark only one oval.*

- ☐ a) Prior is the initial probability, posterior is updated with evidence
- ☐ b) Prior is the updated probability, posterior is the initial probability
- ☐ c) Prior and posterior are the same
- ☐ d) Prior is used for prediction, posterior is not used

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