Day-13 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

1. Email *

2. **1. What does KNN stand for?** *

Mark only one oval.

- a) Knowledge Near Neighbors
- b) K-Nearest Neighbors
- c) K-Neighborhood Network
- d) Knowledge Neural Network

3. **2. Which of the following is true about KNN?** *

Mark only one oval.

- a) It is a parametric algorithm
- b) It is insensitive to irrelevant features
- c) It requires model training before making predictions
- d) It requires a lot of computation for large datasets

4. **3. What is the primary purpose of SVM?** *

Mark only one oval.

- a) Creating a decision tree
- b) Finding the hyperplane that best divides a dataset into classes
- c) Clustering similar data points
- d) Transforming data into a higher dimension

5. **4. In KNN, how is the value of 'k' chosen?** *

Mark only one oval.

- a) Randomly
- b) Using domain knowledge
- c) Using cross-validation
- d) Using the mean of the dataset

6. **5. Why is feature scaling important for KNN and SVM?** *

Mark only one oval.

- a) To reduce computation time
- b) To handle categorical variables
- c) To ensure all features contribute equally to the distance calculations
- d) To remove noise from the data

7. **6. What is a support vector in SVM?** *

Mark only one oval.

- a) A data point that is closest to the hyperplane
- b) A data point that is farthest from the hyperplane
- c) A data point that is incorrectly classified
- d) A data point used to define the margin

8. **7. What is the purpose of the kernel trick in SVM?** *

Mark only one oval.

- a) To reduce computation time
- b) To transform data into a higher dimensional space
- c) To handle missing values
- d) To reduce overfitting

9. **8. Which metric is commonly used to evaluate the performance of a classification model?** *

Mark only one oval.

- a) Accuracy
- b) Mean Squared Error (MSE)
- c) R-squared
- d) Adjusted R-squared

10. **9. What is the main advantage of using KNN?** *

Mark only one oval.

- a) It is computationally efficient
- b) It is easy to implement and understand
- c) It performs well on large datasets
- d) It is not sensitive to irrelevant features

11. **10. What is the purpose of cross-validation?** *

Mark only one oval.

- a) To split the data into training and testing sets
- b) To evaluate the model on unseen data
- c) To optimize hyperparameters
- d) All of the above

12. **11. What is the main task when using KNN for digit classification?** *

Mark only one oval.

- a) Finding the closest neighbor
- b) Transforming images into vectors
- c) Training a neural network
- d) Finding the optimal hyperplane

13. **12. What is the advantage of saving a trained model?** *

Mark only one oval.

- a) To avoid retraining the model
- b) To share the model with others
- c) To deploy the model in production
- d) All of the above

14. **13. What happens if 'k' is set too high in KNN?** *

Mark only one oval.

- a) The model will overfit the data
- b) The model will underfit the data
- c) The model will be highly sensitive to outliers
- d) The model will perform better

15. **14. Which of the following is a common range to test for 'k' values?** *

Mark only one oval.

- a) 1 to 10
- b) 1 to 100
- c) 1 to 50
- d) 1 to 5

16. **15. What is the effect of a small 'k' value in KNN?** *

Mark only one oval.

- a) The model will generalize better
- b) The model will be robust to noise
- c) The model will be more sensitive to noise and outliers
- d) The model will perform worse

17. **16. What does a high gamma value in SVM signify?** *

Mark only one oval.

- a) A smooth decision boundary
- b) A complex decision boundary
- c) Reduced overfitting
- d) High bias

18. **17. What does a low gamma value in SVM signify?** *

Mark only one oval.

- a) A complex decision boundary
- b) Increased overfitting
- c) A smooth decision boundary
- d) High variance

19. **18. How does gamma affect the SVM model?** *

Mark only one oval.

- a) It changes the regularization strength
- b) It controls the trade-off between bias and variance
- c) It defines the influence of a single training example
- d) It changes the type of kernel used

20. **19. Which parameter is tuned along with gamma in SVM?** *

Mark only one oval.

- a) C
- b) K
- c) N
- d) M

21. **20. What is the purpose of the confusion matrix in evaluating classification models?** *

Mark only one oval.

- a) To visualize the decision boundaries
- b) To measure the performance of the classification model by showing true positives, true negatives, false positives, and false negatives
- c) To tune the hyperparameters of the model
- d) To split the dataset into training and testing sets