The K-Nearest Neighbours (KNN) classifier's performance on a synthetic dataset and the Iris dataset. Predictions are made on both the training and test data after the classifier is first trained on the Iris dataset with k=3.

With training and test accuracy of 96.67% and 96.67%, respectively, the results indicate the model has good generalization and little overfitting.

The classifier achieves high accuracy with negligible misclassifications because the Iris dataset has clear class separations.

Make_blobs() creates a synthetic dataset with 150 samples and three clusters, which is then used to retrain and test the classifier.

With 100% accuracy on both training and test data, the model indicates impressive accuracy and suggests unique class separations in the dataset.

There are 120 training samples and 30 test samples in the dataset, which is 80-20 split. When class boundaries are clearly defined, the model successfully separates clusters, proving the efficacy of KNN.

Classification results on the synthetic test dataset are graphically represented in the final scatter plot. Because the classifier achieves 100% test accuracy, the clusters appear clearly separated, and each point is coloured _ according to the predicted class label. This demonstrates that KNN works best in situations with different class boundaries.