

You are given a dataset containing information about different types of fruits. The dataset includes three features: `mass`, `width`, and `height`, along with a label indicating the type of fruit (`fruit_label`). Implement a K-Nearest Neighbors (KNN) classifier to classify the types of fruits based on their features. Follow these steps to complete the task:

1. **Load the Dataset:** Import the data from the CSV file named `fruit_dataset.csv`.
2. **Extract Features and Labels:** Extract the features `mass`, `width`, and `height` into a variable `x`, and the labels into a variable `y`.
3. **Visualize the Data:** Create a scatter plot of the fruits' width and height, colored by their labels. Use different colors for different fruit labels.
4. **Split the Dataset:** Split the dataset into training and testing sets with 80% training data and 20% testing data. Use a `random_state` of 1234 to ensure reproducibility.
5. **Train the Classifier:** Implement a K-Nearest Neighbors (KNN) classifier with `k=5`. Train the classifier using the training data.
6. **Evaluate the Classifier:**
 - Calculate and print the training accuracy.
 - Calculate and print the test accuracy.
7. **Predict New Data:** Predict the type of fruit for a new data point. Print the predicted label.