Algorithm 1 K-Nearest Neighbor Classification (K-NNC)

Input: Training dataset $D = \{(x_1, y_1), (x_2, y_2), \ldots, (x_n, y_n)\}$, test sample x, integer K
Output: Predicted label y for test sample x
for each training sample (x_i, y_i) in D **do**
    Compute the Euclidean distance d_i between x and x_i
end for
Sort all distances in ascending order
Select the K training samples with the smallest distances
Count the frequency of each label among the K neighbors
Assign the label with the highest frequency to x
return predicted label y