SC4000/CZ4041/CE4041: Machine Learning
Lecture 6 Tutorial Question Sets

Question 1: Given the two cases shown in Figure 1, should we perform post-pruning using pessimistic error for each of them?
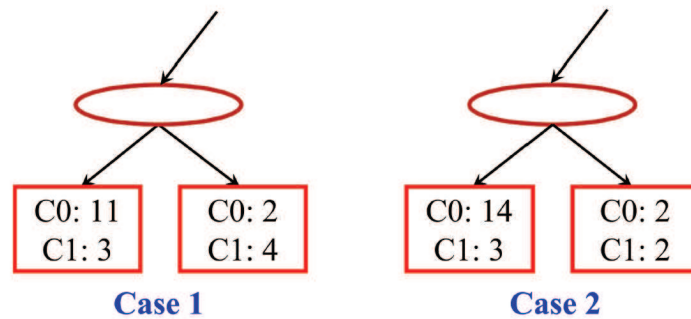

Figure 1: Two cases of decision trees.

Question 2: Consider a binary classification problem. Given a test instance, suppose the 5 nearest neighbors of the test instance in the training data set are shown in Table 1. Use a 5-NN classifier with the distance-weighted voting approach to make a prediction on the test instance.

Table 1: The 5 nearest (training) neighbors to a test instance.

Training instance index	Class label	Distance to the test instance
1	+	3
2	+	3.5
3	+	4
4	−	1.5
5	−	2