

CSC242: Homework 4.1

AIMA 18.1, 18.3

1. For each of the following types of learning, briefly describe what is learned and what knowledge, data, or feedback the learning agent receives to help it learn.
 - (a) Unsupervised learning
 - (b) Supervised learning
 - (c) Reinforcement learning
2. Make sure you understand the decision tree learning algorithm shown in AIMA Fig 18.5. Implementing it as part of Project 4 would be A Good Idea.
3. Does the decision tree shown in Fig 18.6 classify all the training examples perfectly? How would you know?
4. How about the tree from Fig. 18.2? Is this property true for every decision tree?
5. When learning a decision tree, suppose that you have considered all the attributes but still you are left with a subset of the examples that cannot be classified uniquely. What does this mean? Could it happen in real life? Why or why not?
6. Name the most important advantage that decision trees have over most other learned representations.