## AdvancedLearningAlgorithms - WEEK4 - DecisionTree - QUIZ 1 (DecisionTrees)

Link: <u>AdvancedLearningAlgorithms - WEEK4 - DecisionTree - QUIZ 1</u> (DecisionTrees)

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## Decision Tree Learning Decision 1: How to choose what feature to split on at each node? Maximize purity (or minimize impurity) Far Shape Pointy Floppy Round Not round Present Absent S/5 cats O/5 cats

- 2. Take a decision tree learning to classify between spam and non-spam email. There are 20 training examples at the root note, comprising 10 spam and 10 non-spam emails. If the algorithm can choose from among four features, resulting in four corresponding splits, which would it choose (i.e., which has highest purity)?
  - Left split: 2 of 2 emails are spam. Right split: 8 of 18 emails are spam.
  - Left split: 5 of 10 emails are spam. Right split: 5 of 10 emails are spam.
  - Left split: 10 of 10 emails are spam. Right split: 0 of 10 emails are spam.
  - Left split: 7 of 8 emails are spam. Right split: 3 of 12 emails are spam.
  - ✓ Correct Yes!