

## Homework 4: Decision Trees

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**DO NOT POLLUTE!** AVOID PRINTING, OR PRINT 2-SIDED MULTIPAGE.

### Problem 4.1

**Passenger Class:** First class is zero and other classes are 1.

**Sex:** I left sex alone, since it was already binary.

**Age:** I split age based on the median. If you were above the median age, you get 1, otherwise 0.

**Siblings/Spouse:** I chose 0 for no siblings/spouses and 1 for any number of them.

**Parents/Children:** Similarly, I chose 0 for no parents/children and 1 for any

**Fare:** I split fare based on the median.

### Problem 4.2

See *decision.trees.py* under comment "4.2 Find Mutual Information" for code

### Problem 4.3

### Problem 4.4

### Problem 4.5

### Problem 4.6

### Problem 4.7

(a)

(b)

(c)

**Problem 4.8**

- (a)
- (b)
- (c)

**Problem 4.9****Problem 4.10**