

## CS181 Assignment 1

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### 1. Decision Trees and ID3

(a) ID3 will chose to split on  $\boxed{A}$  because it has a higher information gain.

- Splitting on B will have an information gain of  $Gain(X_k, B) = H(B) - Remainder(X_k, B) = ?? - \frac{2}{7}(\frac{1}{2} \log_2 2 + \frac{1}{2} \log_2 2) + \frac{3}{7}(\frac{3}{5} \log_2 2)$

### 2. ID3 and Pruning

### 3. Boosting

### 4. Tree Analysis