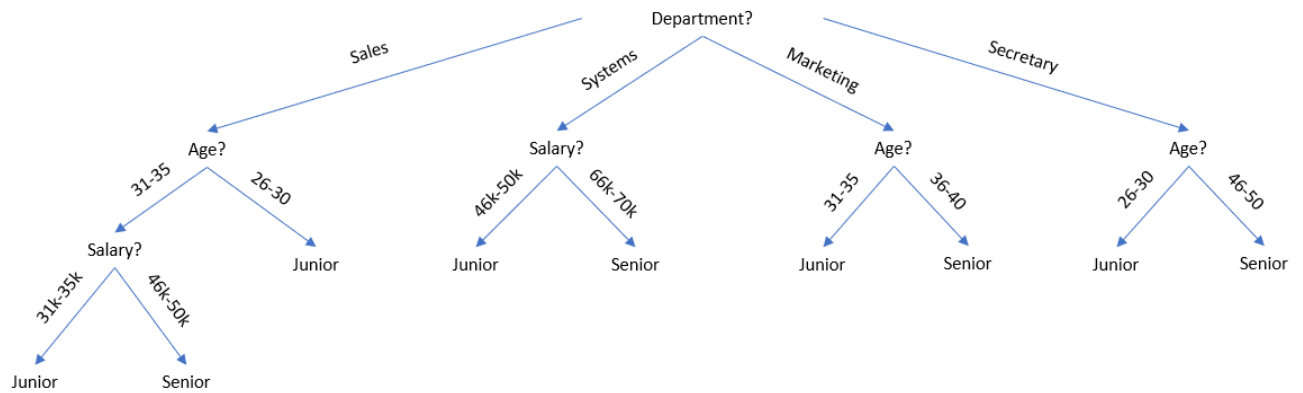


1. Construct a decision tree from the data [30 points].



2. For the following test data, what would be the class label prediction using the Naive Bayesian classification method? [30 points]

- <systems, 26...30,46-50k>

Let  $X = \langle \text{systems, 26...30,46-50k} \rangle$

In the data given to us, there is no senior within the ages of 26 through 30.

Therefore,  $P(X|\text{Senior}) = 0$ .

$$P(X|\text{Junior}) = 3 / (30 + 40 + 40 + 20 + 5 + 3 + 3 + 10 + 4 + 4 + 6) = 3 / 165 = 0.018.$$

Therefore, the class label predicted by the Naïve Bayesian classification method would be junior.