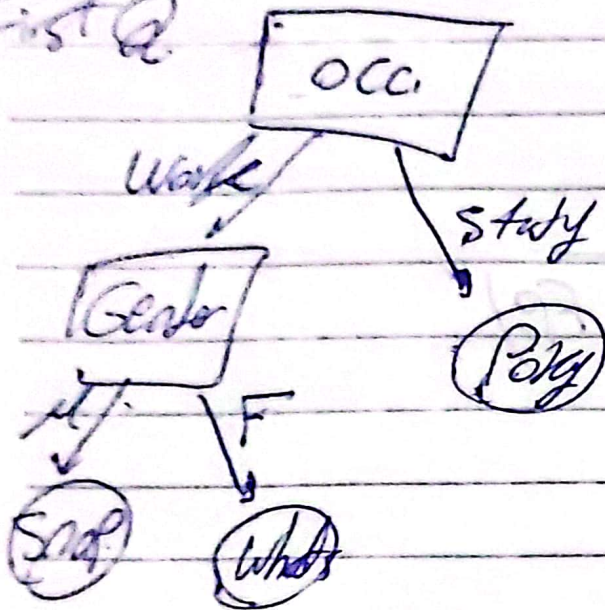


# Decision Trees

First Q



## Entropy

Multiplication of Probabilities (non-independent)

$$\text{Entropy} = -\frac{m}{m+n} \log_2 \left( \frac{m}{m+n} \right) - \frac{n}{m+n} \log_2 \left( \frac{n}{m+n} \right)$$

$$\text{Information gain} = \text{Entropy}(\text{Parent}) - \frac{1}{2} \left( \text{Entropy}(\text{Child 1}) + \text{Entropy}(\text{Child 2}) \right)$$