

## Stock Market Prediction Problem

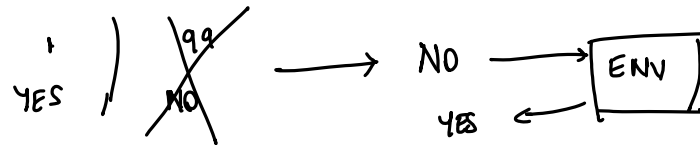
NO YES

- ① Recieve advice from a set of 'd' experts
- ② Somehow use advice (algorithm) and make a decision
- ③ Recieve feedback from the environment (market) and somehow "learn" from it.

Majority Algorithm: Predict based on the majority from the set  
of 'consistent' experts

## Analysis of the MAJORITY ALGORITHM

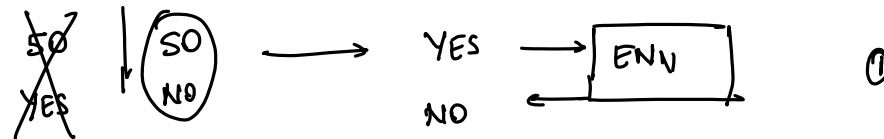
100 experts

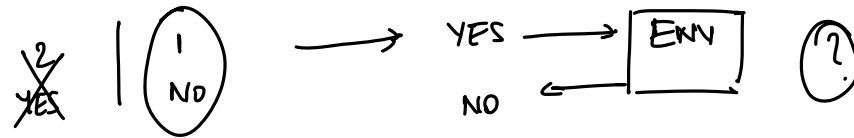
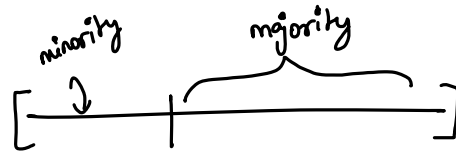
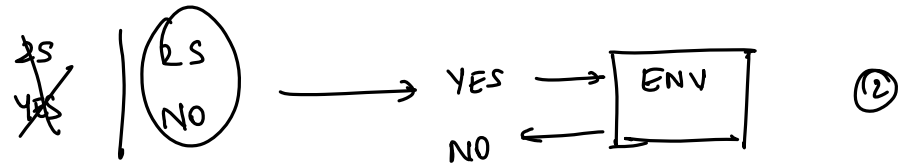


1 mistake → Set of consistent experts has just 1 person → GURU!

---

Tie breaking Mechanism → Always pick "YES"





$100, 50, 25, 12, 6, 3, 1 \longrightarrow 6 \text{ mistakes.}$

$25 \longrightarrow \begin{array}{c} 13 \\ \text{YES} \end{array} \bigg| \begin{array}{c} 12 \\ \text{NO} \end{array}$

$$100 \times \left(\frac{1}{2}\right)^2 = 1 \implies \frac{100}{2^2} = 1$$

$$2^x = 100$$

$$x = \lceil \log_2 100 \rceil$$

$$= \lceil 6.64 \rceil = 7 \text{ mistakes}$$

$$1.012... \rightarrow 2$$

$$0.98 \rightarrow 1$$

$$0.0012 \rightarrow 1$$

"CEIL"

